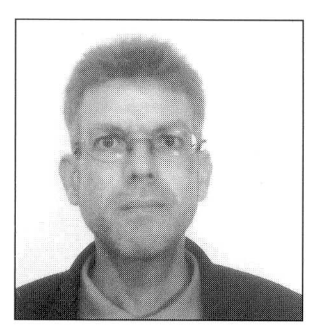
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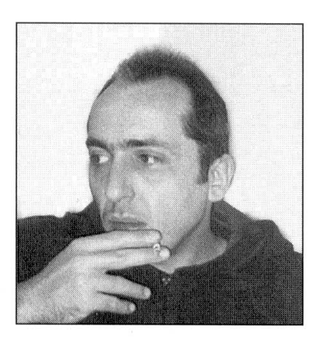


Mycenaean Citadels *c.* 1350–1200 BC

Nic Fields • Illustrated by Donato Spedaliere



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Artist's note

Our sincere thanks to all who have helped in the preparation of this book. We would like to dedicate this book to our dearest daughter Alina.
Readers may care to note that the original paintings from which the colour plates in this book were prepared are available for private sale. All reproduction copyright whatsoever is retained by the Publishers. All enquiries should be addressed to:

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The Publishers regret that they can enter into no correspondence upon this matter.

Editor's note

When classical authors are referred to throughout the text the standard form of reference has been adopted. The formula used is 'author', 'title' (if the author wrote more than one work) followed by a one-, two- or three-figure reference. If the work is a play or poem, the figure reference indicates either 'line' or 'book' and 'line'. Thus 'Homer (*Odyssey* 8.512)' refers to line 512 of the eighth book of the *Odyssey*. Alternatively, if the work is a treatise, the figure reference indicates 'book' and 'chapter' or 'book', 'chapter' and 'paragraph'. Thus 'Strabo (13.1.32)' refers to paragraph 32 of chapter 1 of the 13th book of the only surviving work by Strabo. When modern authors are referred to throughout the text the Harvard system of referencing has been adopted. The formula used is 'author', 'publication date' followed by page number(s). Thus 'Drews (1993: 106)' refers to page 106 of his 1993 publication, that is, *The End of the Bronze Age: Changes in Warfare and the Catastrophe c. 1200 BC.*

Contents

Introduction

Fortification systems are pre-eminently the materialised expression of the human fear of being attacked, and of losing life, freedom or property. Thus for as long as humankind has required protection it has built fortifications. Put simply, the art of fortification consists of the combination of terrain with available materials to form defences. Conversely, siegecraft concerns the attack of these fortifications. Throughout history there has been a changing balance between attack and defence as technology and tactics swing the advantage first one way and then the other. The prehistoric period is no different in this respect.

The earliest extant representation of siegecraft is a Dynasty V (*c.* 2498–2345 BC) limestone bas-relief from the rock-cut tomb of Inti at Deshaheh, Middle Egypt. It shows Egyptian warriors storming a fortified city by a combination of scaling and breaching. Some are climbing the walls under covering fire from archers, while others are busy prising at the mud-bricks, of which the walls are evidently built, with picks. The walls, viewed from above, are studded with well-built semicircular towers.

One of the primary purposes of the prehistoric development of permanent habitation sites was defence, as illustrated by the preponderance of settlements upon naturally defensible terrain. This purpose would evolve further, and the first major urban centres, complete with elaborate fortification systems, were flourishing in southern Mesopotamia by the second half of the 4th millennium BC. A favourable geographical and ecological setting, namely the fertile valley of the Tigris–Euphrates, and complex technological innovations, like the plough and the irrigation canal, had enabled the production of a substantial food surplus with relative ease. This led to the concentration of wealth and the need for walls to defend it, as at Uruk (biblical Erech), where the *enceinte* was approximately 9.5km in length and studded by 900 or more semicircular bastions.

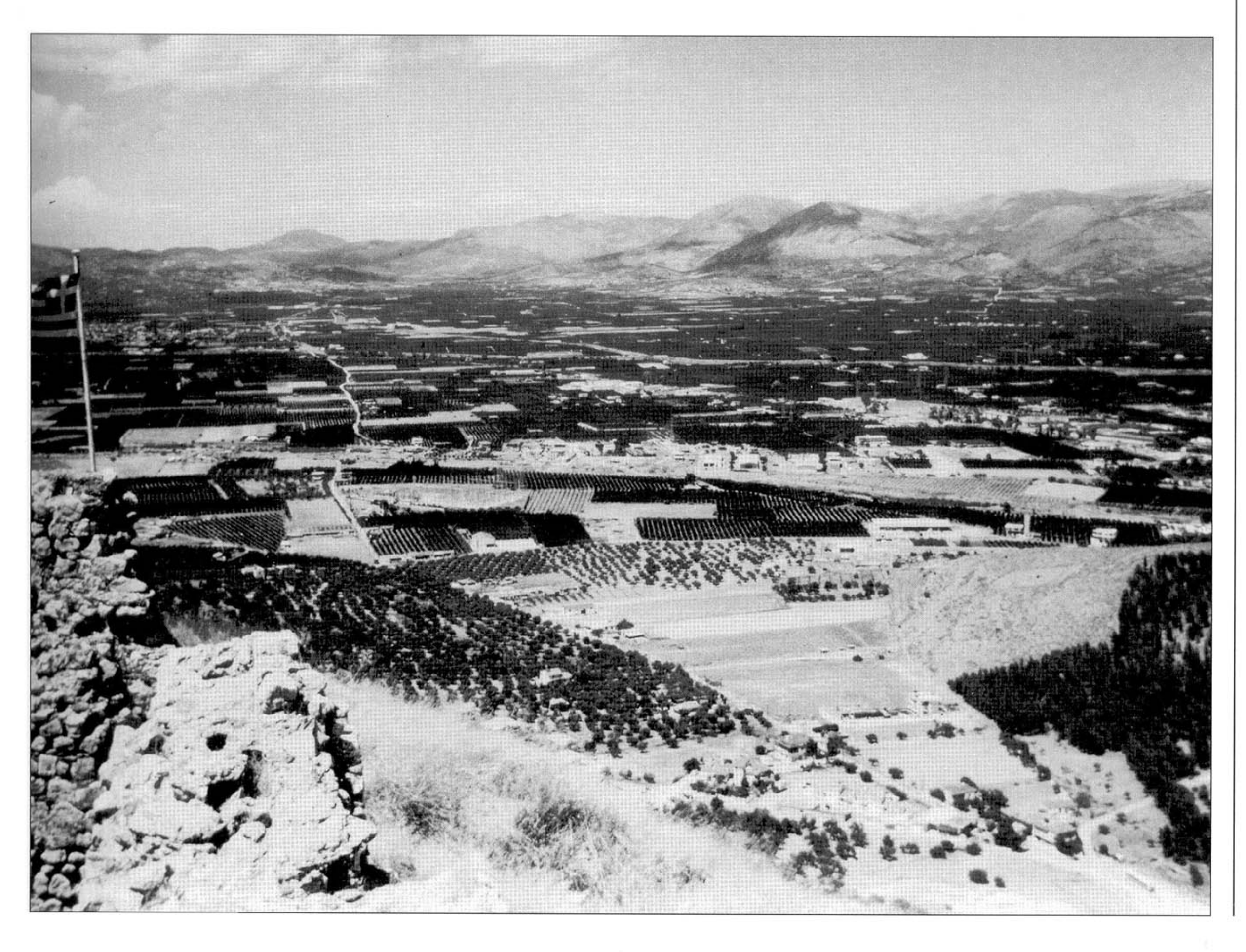
Although the oak-covered hills to the east and north of the Tigris–Euphrates valley were home to a number of the earliest settled sites, the world's first discernible fortified settlement was Jericho (Tell es-Sultan). The fortifications at this oasis in the Jordan valley, which may have first attracted settlers as a hunting site, have been dated to the early 7th millennium BC, although the most recent opinion suggests they date back to the beginning of the 8th millennium BC. The most impressive component of this Neolithic fortification system was a circular stone tower standing 8.5m high and 10m in diameter. Associated with a stone-built curtain-wall, 7m high and 3m thick, and a continuous V-shaped fosse cut into bedrock, the tower was a solid stone structure with an internal staircase of 22 steps that gave access to a fighting-platform. To these three defensive elements – fosse, circuit-wall, tower – fortification architects were to add little until the advent of gunpowder. Within the *enceinte* the settlement of roundhouses covered an area of 3ha and contained some 1,500 people, of which one-third were probably capable of bearing arms. Jericho should be viewed not simply as a refuge but also as a stronghold, that is, a place not merely of short-term safety but also of active defence.

Modern scholars have hypothesised that there were two major reasons that lay behind the construction of walls around settlements. First, walls were developed as a defence from handheld projectile weapons, that is, the self-bow and the sling, two products of the recent revolution in weapons technology. Second, the development of a sedentary lifestyle based upon agriculture and animal husbandry. The two are intrinsically linked, since protection against projectile weapons was possible only once humans had settled and began to live

in a fixed place, thus giving them the opportunity to construct permanent defensive works. Behind their new walls Neolithic communities could store surpluses of food and, because they could fall back behind the walls for protection, they could exploit the land outside them with some sense of security.

The development of fortified settlements in Europe began towards the end of the Neolithic period, and there is evidence of the enclosure of habitation sites with ditches and/or timber palisades. Such enclosing features later developed into genuine fortifications, their strength reflecting not only the need to protect a settlement and its contents, but also a desire to display power and wealth as a sign of rank at a time of emerging social differentiation. Some of the earliest examples are to be found in Greece. They include Sesklo and Dimini in Thessaly, two earlier unfortified settlements that were enclosed by stone walls sometime in the 4th millennium BC. The strength of the fortifications at Dimini, and probably at Sesklo too, was not so much in the walls itself, as in their number and placement.

The hill site was surrounded by at least six circuit-walls, one within the other and 1 to 15m apart. They vary in thickness from 0.6 to 1.4m, were possibly 2 to 3m in height, and were made of rough slate set in clay. The walls followed the natural contours of the oval-shaped hill and had no corners or bastions. Many narrow entranceways provided access to the centre, and the passageways between each circuit-wall had cross-wall partitions, which further strengthened the defences by creating a challenging maze for any attacker trying to reach the central point of the enclosure. This example of a Late Neolithic fortification nicely illustrates the simplicity of offensive weapons and the means that attackers had for assaulting an enclosed settlement.



The Argive plain, looking north towards Mycenae from the Larissa of Argos, the citadel crouches between the two conical-shaped mountains just right of centre. Watered by the Inachos, the Charadros and other seasonal streams, this plain was the powerhouse of the Mycenaean world. Its dryness was attributed in antiquity to the wrath of Poseidon because Inachos, the chief river of Argos and its god, allotted the country to Hera. Hence Argos is 'very thirsty' in Homer (*Iliad* 4.171). Close to the sea, however, the land is marshy, and between the marshes and the upper part of the plain is the fertile tract of land, which was celebrated in Homer (*Iliad* 2.287) for the horses bred in its pastures. (Author's collection)

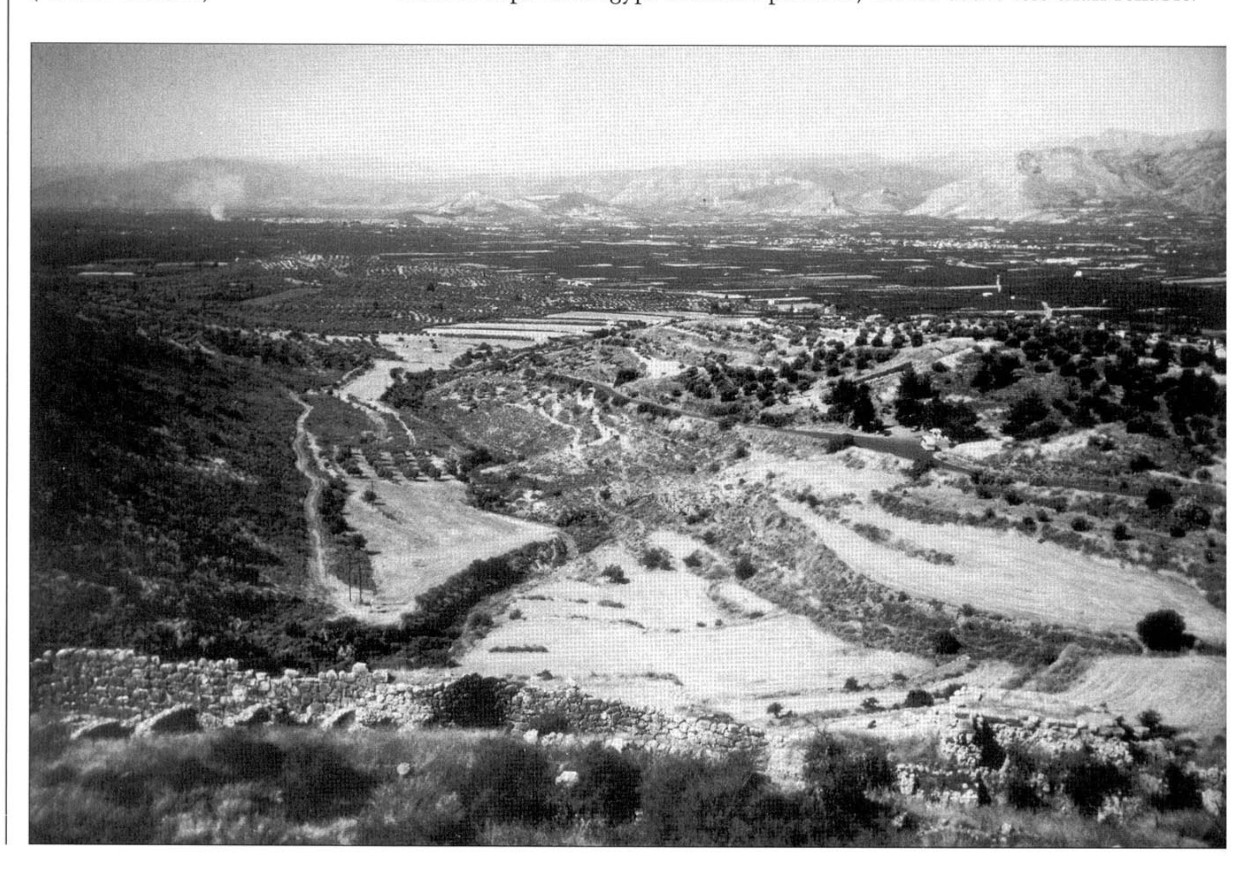
Terminology and chronology

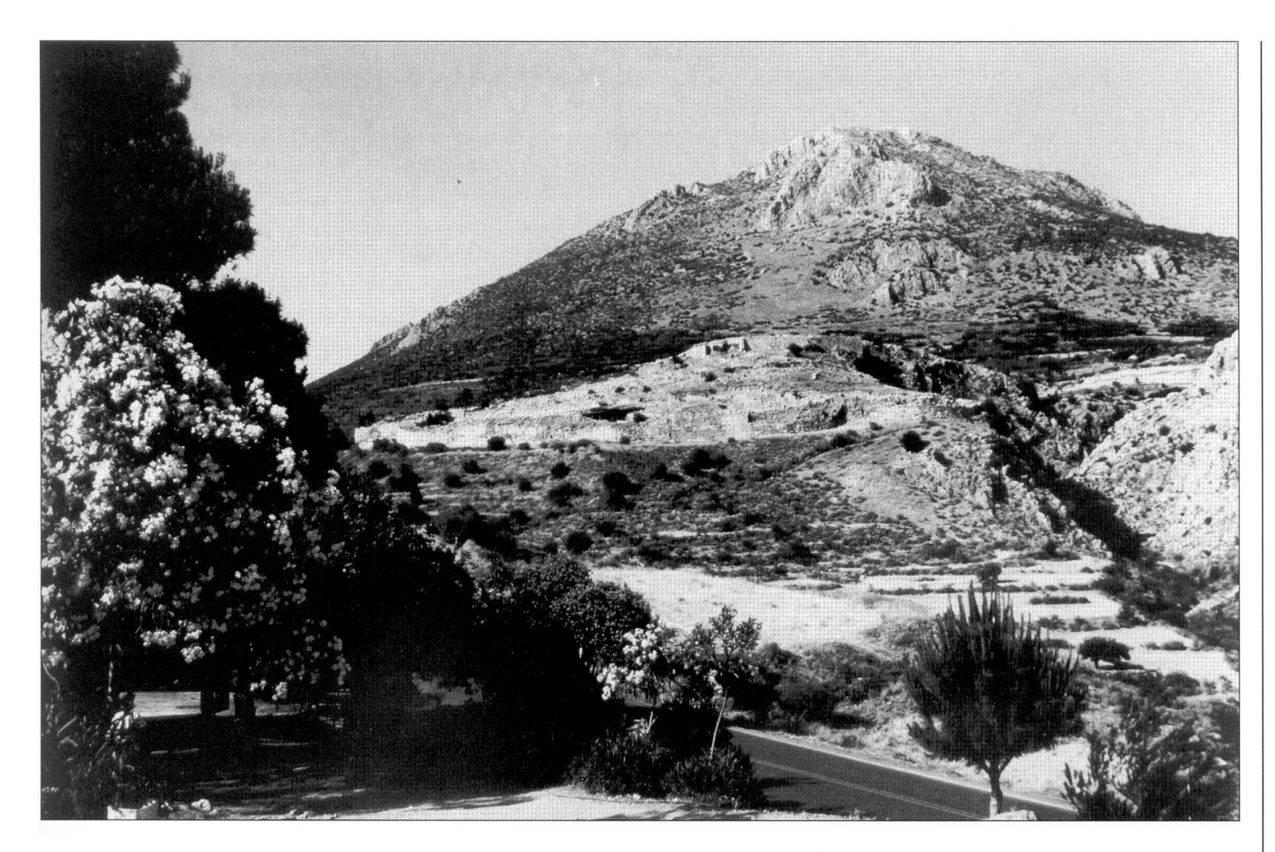
Humankind knew metal as early as the Neolithic period, but the terms 'Stone', 'Bronze' and 'Iron' ages have their roots in Christian Jürgensen Thomsen's Three-Age System (1819). For sake of convenience this three-part system for the chronological classification of prehistoric artefacts is still employed as reference points to this day. The main characteristics of the Aegean Bronze Age – apart from the wider use and distribution of metals – are as follows:

- Technical specialisation and the division of labour
- Increase in population
- Long-distance trade and contact with the Near East
- The emergence of social complexity and hierarchy
- The emergence of hilltop citadels
- Monumental building programmes
- Urban planning
- High quality art and metalwork
- The administrative use of seals and writing

Lacking written records, we rely upon stratification and the comparison of objects from other sites to establish a relative chronology for the Aegean Bronze Age. Absolute dating may be approached through proven Aegean relationships with Egypt and Mesopotamia, but its use is less than reliable.

The splendid vista, looking south-west from the palace of Mycenae, takes in the Argive plain with the Larissa of Argos prominent just left of centre. A Mycenaean citadel was a fortification and residence rather than a mere fortress, and the placement of the palace at Mycenae on the summit of a rocky outcrop could be taken as evidence that a view was a common concern of Mycenaean architects. However, it is far more likely that the occupant of this palace simply wanted his residence to be located physically above any other structure within his capital as a symbol of his own elevated social status. (Author's collection)





The legendary citadel of Mycenae, as seen from the Treasury of Atreus looking north-east. Directly behind the citadel rock rises Profitis Ilias (750m), one of the two peaks that overlook Mycenae, and to the right runs the winter torrent known as the Khavos. Access to the citadel, therefore, is made difficult by these physical features and, as a consequence, the hill (278m) is a splendid natural strongpoint, despite it being lower than the surrounding peaks. (Author's collection)

This problem is well illustrated by the fierce debate, which has been raging since 1987, over the absolute date for the eruption of the Cycladic island of Thera (Santorini). The caldera created by the volcanic eruption measures some 83km^2 in area, the largest to date. It presently extends down as much as 480m below sea level inside the wall of cliffs that surrounds it, which themselves rise as much as 300m above sea level. Unsurprisingly, its impact upon the cultural history of the Aegean and eastern Mediterranean worlds has been widely discussed. According to S. Marinatos, the first excavator of the Bronze Age settlement of Akrotiri on the southern tip of Thera (1967–74), there is an intimate connection between the Theran eruption and the collapse of the Minoan palatial civilisation on Crete and the subsequent arrival of the Mycenaeans there.

Traditionally this cataclysmic event was placed around 1500 BC, but in recent years this date has been questioned and pushed back to circa 1628 BC. If this date is correct, which is based on radiocarbon dating with further confirmation from ice-core dates from Greenland and dendrochronological evidence from Northern Ireland, then the whole chronological system of the eastern Mediterranean needs to be changed.

It is, therefore, always best to describe an archaeological assemblage in terms of a relative chronological label (e.g. Early Cycladic, Middle Minoan, Late Helladic) rather than in terms of its supposed duration in calendar years BC. Historical phasing in Aegean archaeology is primarily based upon a regional classification system derived from common traits in material culture, socio-political organisation and religious beliefs. For the Aegean Bronze Age four regional cultures can be distinguished: mainland Greece, Cyclades, Crete, and Western Anatolia.

Classification has its roots in the archaeological discoveries of the 19th century when Heinrich Schliemann and his excavation at Mycenae (1874–76) established Aegean prehistory, the term 'Mycenaean' being applied to similar material found in other Aegean sites. However, Schliemann was only seeking

sites that featured in the Homeric epics, excavating Troy, Mycenae, Tiryns and Orchomenos with the primary aim of verifying the legends. The excavations of C. Tsountas, however, at Early Bronze Age cemeteries in the Cyclades (1898–99) and Neolithic sites in Thessaly (1901–03), provided evidence for the existence of a pre-Mycenaean culture. He was also responsible for the methodical excavation of the fortified hilltop settlement at Kastri on Syros, one of the important examples that serve as possible forerunners to Mycenaean military architecture.

The first scientific excavation at Phylakopi on Melos (1896–99), under the British School at Athens, set out to investigate the relationships of Tsountas' 'Cycladic Civilisation'. Soon after, Sir Arthur Evans devised a tripartite system of classification for Aegean prehistory based upon his excavation at the Minoan palace of Knossos, with the assumption that all civilisations have a period of rise, maturity and decay. Accordingly, he divided the Cretan material into three phases, namely Early, Middle and Late Minoan, paralleling the tripartite division of Egyptian history into Old, Middle and New Kingdoms. He saw Minoan civilisation (named after the legendary king Minos) as ordered, with a highly centralised bureaucracy analogous to contemporary Near Eastern states.

The terminology used for the Aegean Bronze Age was firmly based on discoveries in the Near East, that is, palace, town, state, king and military elite. As a result, attention was now focused upon Late Bronze Age palaces, and the discovery of elaborate architecture, fortification systems and rich burials. Bucking the trend, C. W. Blegen and A. J. B. Wace conducted excavations at Korakou in Corinthia and Eutresis in Boiotia (1920) and established a pre-Mycenaean phase that they named 'Helladic', thereby stressing the individuality of the Greek mainland past. This was in direct conflict with Evans and his acolytes, who assumed that Helladic culture was Minoan and not Greek.

The Bronze Age culture of the mainland is labelled 'Helladic' after Hellas, the Greek term for Greece. The Early Helladic (EH) was a time of prosperity, with the use of metals and a growth in technology, economy and social organisation. By comparison the Middle Helladic (MH) period was a backwater period, developing at a much slower pace with the evolution of megaron-type cist (or box-shaped) graves, use of wheel-made pottery and contacts with the Cyclades and Minoan Crete. However, towards the end of the Middle Helladic period a number of centres of power arose, sites of considerable wealth dominated by a small military elite (cf. the Shaft Graves in Grave Circle A at Mycenae with their vast quantities of gold, weapons and exotic imports). The Late Helladic (LH) or Mycenaean period (*c.* 1650–1050 BC) represents the first advanced civilisation with its palace and urban organisation, fortification systems, works of art and writing system. Needless to say Minoan culture played a major role in the shaping and development of Mycenaean culture.

After the eruption of Thera and the series of catastrophes that swept Crete, the centre of gravity shifted from the Aegean to mainland Greece. The Mycenaeans superseded the Minoans and spread their influence throughout the Aegean. Around the mid-15th century BC they established themselves at Knossos. The earliest palace structures are likely to be the megaron-type buildings, such as the Menelaion in Lakonia. Palaces proper are datable to the LH IIIA period when the Cyclopean fortifications were built at Mycenae and Tiryns. During the LH IIIB period Mycenaean Greece reached its apogee. This was the time of the Mycenaean commonwealth (*koine*) throughout the Aegean (cf. 'The Trojan War').

Aegean Bronze Age chronology

All dates are approximate, not absolute, and come almost entirely from two sources, namely, radiocarbon dates and artefacts. The artefacts are those foreign objects of reasonably secure date found in archaeologically sound Aegean contexts, and Aegean objects (whose relative date in Aegean contexts is secure)

found as imports in foreign (mainly Egyptian) contexts whose date does not depend entirely on a relative cultural sequence.

Near East	Mainland Greece	Dates
Early Bronze Age (EBA) Middle Bronze Age (MBA) Late Bronze Age (LBA)	Early Helladic (EH) Middle Helladic (MH) Late Helladic (LH)	*c.* 2900–2000 BC *c.* 2000–1650 BC *c.* 1650–1050 BC
PROTO-PALATIAL PERIOD LH I, IIA & IIB	Grave Circles A & B, Mycenae	*c.* 1650–1425 BC
PALATIAL PERIOD LH IIIA & IIIB LH IIIB/C	Mycenaean palace complexes Palace destruction levels	*c.* 1425–1200 BC *c.* 1200 BC
POST-PALATIAL PERIOD LH IIIC Sub-Mycenaean	Transition to Iron Age	*c.* 1190–1050 BC *c.* 1050–1000 BC

Chronology of major Bronze Age events

All chronological dates must be taken as circa not absolute, as the latter are not yet very reliable and many different sets of dates are often in use for one and the same phase or period.

3100 Start of Bronze Age culture on mainland Greece, Cyclades and Crete
3100–1900 Minoan Pre-Palatial period on Crete (EM I–III & MM IA)
2900 Hisarlik is settled and soon fortified (Troy I)
2600 Start of Cycladic culture in the Cyclades
2450 Troy Ik destroyed but soon rebuilt (Troy IIa)
1900–1700 Minoan Proto-Palatial period on Crete (MM IB–IIB)
1700–1450 Minoan Neo-Palatial period on Crete (MM III–LM IB)
1700–1250 Troy VI, established by Neo-Trojans, major trade centre and maritime power
1650–1550 Grave Circle B at Mycenae (LH I)
1650 Foundation of Hattušas-Boğazköy by Hattušili I
1628 Cataclysmic eruption of Thera (Santorini) according to scientists
1600 Cyclades under Minoan influence
1550–1425 Grave Circle A at Mycenae (LH I–IIB)
1500 Cataclysmic eruption of Thera according to archaeologists
1457 Battle of Meggido
1450 Mycenaeans at Knossos on Crete (Linear B) and in Cyclades
1400 Dendra Panoply (LH IIIA)
1380 Destruction of Knossos
1300 Treasury of Atreus at Mycenae (LH IIIB)
1275 Battle of Kadesh
1260/50 Destruction of Troy VIh (Homer's Troy?)
1250 Lion Gate and North-East Postern, Mycenae (mid LH IIIB)
1200 North-East extension, Mycenae (end LH IIIB)
Warrior Vase from Mycenae (LH IIIB/C)
1200/1180 Widespread destruction of Mycenaean citadels (LH IIIB/C)
1190/80 Destruction of Hattušas-Boğazköy
1185 Destruction of Ugarit
1184 Traditional date for destruction of Homer's Troy according to Herodotos
1180 Destruction of Troy VIIa
1179 Rameses III defeats the 'Peoples of the Sea' in the Nile Delta
1100 So-called invasion of Dorian Greeks from north-west Greece
1050 Migration of mainland Greeks to Aegean islands and Anatolia

Mycenaean fortification systems

The initial Mycenaean fortification systems were intimately linked with the establishment of major palace complexes on mainland Greece. As such they may also reflect a consolidation of control and expression of power more than any perceived need for active defence. On the other hand, the final fortification systems were laid out with considerable care, and incorporated technical refinements such as secret cisterns, galleries, sally ports and projecting bastions to protect gateways.

Mycenaean citadels depended for their strength not only on planning but also on size and adaptation to the terrain. They were normally defensive, aimed at providing lasting protection against current siege techniques. Yet despite being impressive examples of military architecture, they were not solely utilitarian. The message of power, dignity and awe constitutes the metaphysics of fortification systems, and Mycenaean circuit-walls, bastions and gateways were designed for visual impressiveness as well as functional efficiency. The Mycenaeans fully appreciated the symbolism of war expressed in architecture. Just as architectural devices could represent the dangers of defeat, so a feeling of strength could be imparted to deter an attacker. Protection without resort to force, achieved by deterrence alone, has always been a major feature of fortification.

Location

Mycenaean fortification walls tended to be built along the edge of a sharp change in elevation in the local topography so that the masonry of the circuit-wall combined with the natural contours of the site to create an even more formidable obstacle for attackers. The citadel itself was also accompanied by 'hamlets' of associated non-fortified agrarian settlements.

In choosing a site to fortify, therefore, the prerequisites were few, simple and logical. The Mycenaean architects looked for a hill, ideally flat-topped and not too high, but rocky and adapted to fortification. There had to be sufficient space for a palace complex on the flat summit. The citadel had to be in the immediate vicinity of a fertile area and a constant supply of water. The nearness of rock quarries to provide large amounts of building material without the additional expense, effort and delay of long-distance transportation was also highly desirable.

A general view of Mycenae, looking north-east from Grave Circle B, showing the west curtain-wall. Almost the whole of the *enceinte* is built in the Cyclopean style of large blocks of limestone, quarried from the rock of the citadel itself, and either completely unworked or dressed in only rudimentary fashion. On the summit of the citadel, the extant ruins of the palace complex can be made out. (Author's collection)



The locations of actual or possible citadel sites fall into three main groupings, all of which fulfil the above-mentioned requirements. First, the 'island' acropolis type, which rises in a plain enclosed by mountains and the sea (Tiryns, Athens, Gla). This group is further characterised by a location at the head of a bay and probably derives importance from controlling land-to-sea movements (Argos, Iolkos, Lamia). Second, the 'recess' type, which nestle in one corner of a plain hard up against the mountains and controls the land routes passing through them from one plain to the next (Mycenae, Midea, Krisa). Third, the 'promontory' acropolis type, which directly overlooks the sea and protects a good harbour, thereby owing their importance

to overseas contacts (Aulis, Asine). It should be noted, however, that the majority of Mycenaean sites are located at least several kilometres inland at a safe distance from any direct and sudden impulse from the sea. Thucydides refers to this situation, explaining that 'ancient cities, both on the islands and on the mainland, were built at some distance from the sea on account of the piracy that long prevailed' (1.7).

Method of construction

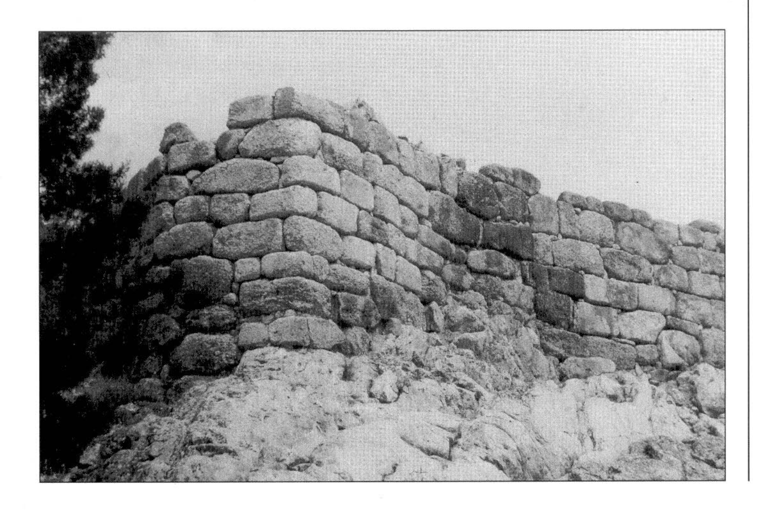
'Cyclopean' is the term normally applied to the masonry style characteristic of Mycenaean fortification systems, and describes walls built of huge, unworked limestone boulders weighing several metric tonnes. These were roughly fitted together without the use of mortar or clay to bind them, though smaller hunks of limestone fill the interstices. The exterior faces of the boulders may have been roughly hammer-dressed, but the boulders themselves were never carefully cut blocks. Thus their placement formed a polygonal pattern, thereby giving the curtain-wall an irregular but imposing appearance. The major determining factor here was the nature and slope of the bedrock. In many places the curtain-wall was built over steep rock continuing the natural defence provided by it. Elsewhere, the bedrock was levelled to form a base for a high and protective superstructure. In both situations, however, the curtain-wall was usually founded in extremely shallow beddings carved out of the bedrock.

The curtain-wall as a whole was composite in construction, being built as two megalithic 'skins' with a fill of smaller rubble and earth, which is typical of Cyclopean masonry. This building method forms strong bulwarks and near impregnable defences, which may reach a thickness of 8m or more. At the top it would have been quite wide enough for a walkway with a narrow protective parapet on the outer edge, possibly of sun-dried mud-brick and having hoop-like crenellations.

The term 'Cyclopean' came about because the later Greeks believed only the one-eyed Cyclopes could have constructed walls built of boulders so gigantic (Bacchylides 10.77, Euripides *Iphigeneia at Aulis* 1500, Apollodoros *Bibliotheca* 2.2.1, Strabo 8.6.11, Pausanias 2.16.5, 25.8, 7.25.3). Enormous boulders are typical of the Mycenaean walls at Mycenae, Tiryns, Argos, Krisa and Athens. Somewhat smaller boulders occur in the walls of Midea, whereas large limestone slabs are characteristic of the walls at Gla. Cut stone masonry is used only in and around gateways, conglomerate at Mycenae and Tiryns and perhaps both conglomerate and limestone at Argos.

Mycenaean megalithic construction is also characterised by corbel vaulting, or the projection of each successive course of stones slightly beyond the course below, so that the wall is stepped upward and outward. As the centre of gravity of the whole tended to move beyond its base as each course was added, counterbalance was provided by piling an increasing thickness of masonry around the exterior. This technique was used to span both circular spaces, such as tholos tombs, and rectangular ones, such as stairways and passageways. Another conspicuous feature of Mycenaean megalithic construction is the use of a relieving triangle above a lintel block. This is an opening, often triangular, designed to reduce the weight over the lintel. The space was filled with some lighter stone.

Yet another defining characteristic was the system of constructing artificial terraces both to extend the area available for building and to strengthen the foundations of major



The junction of the north and the west curtain-walls of Mycenae, which forms the distinctive north-west salient of the *enceinte*. Mycenaean curtain-walls were built as two megalithic 'skins' with a fill of smaller rubble and earth, which is typical of Cyclopean masonry. This building method forms strong bulwarks and near impregnable defences, which may reach a thickness of 8m or more. At the top it would have been quite wide enough for a walkway with a narrow protective parapet on the outer edge, possibly of sun-dried mud-brick and having hoop-like crenellations. (Author's collection)

structures. These terraces were usually built in compartments for strength and filled with relatively small stones mixed with soil and domestic rubbish, largely pottery. Such terraces required advances in drainage; water was allowed to seep through to be channelled out by built drains through the outer terrace walling. In the case of curtain-walls the drains were carefully built narrowing at the outlet so that the press of water would keep the exit clear.

Tools available to Mycenaean builders included the pendulum-saw and the bow-drill, as well as bronze axe and adze blades. However, hard labour was more important than elaborate equipment. The massive Cyclopean boulders would apparently have needed, with the aid of earth ramps and wooden rollers, at least four men to manoeuvre them. As most of the citadels were built on craggy hilltops from which the limestone could be prised with levers, the boulders were probably moved only a short distance to their place on the fortification walls. It seems highly likely that the Mycenaeans used a corvée system of labour.

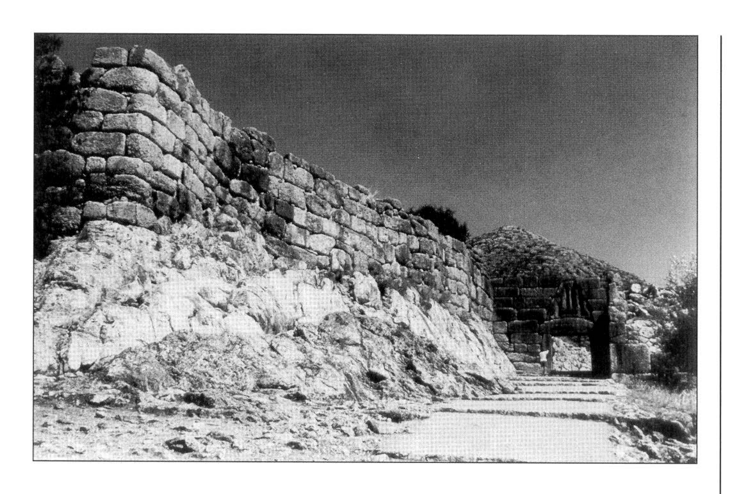
Building programmes

Tripartite building programmes have been detected at both Mycenae and Tiryns, although it is unclear whether the various stages of building at the two sites are contemporary. At both sites, the earliest fortification systems are dated to the late LH IIIA period, while the final fortification systems (including hidden water-supply systems at both sites) are dated to the advanced LH IIIB period. The Mycenaean fortifications of the Athenian Acropolis are said to be of LH IIIB date, although the evidence for such a dating is not very abundant. The water-supply system at Athens can, however, be dated quite confidently to the end of the LH IIIB period, this system being in all probability an imitation of the functionally similar arrangements at Mycenae and Tiryns. Gla's fortifications were apparently built all at once in the early LH IIIB period. The circuit-walls at Midea, Argos and Krisa have yet to be dated accurately.

The major extension of the fortification system to the north in Tiryns' third phase of fortification building used to be considered as the enclosure of a large open space in which herds of animals might be kept during times of siege. However, the German excavations directed by K. Kilian in the late 1970s and early 1980s within this *Unterburg* (Lower Citadel) have demonstrated that the space in question was fairly densely occupied by domestic structures. Both at Mycenae and at Tiryns, a major feature of the extensions built in the third phase of fortification at these sites was the inclusion of tunnels leading from within the walls of these extensions to underground water sources outside the walls. In both cases, the water sources in question lay at relatively low levels beneath the hilltops, which were enclosed within the walls. The builders of these fortifications evidently rejected the option of weakening the fortification circuit as a whole by including the water sources within the *enceinte*. Sally ports were located fairly close to the tunnels leading to the water sources in order to provide defence of these water-supply systems in case a besieging enemy tried to foul the water or destroy the tunnels themselves. The tunnels leading to the water sources were cunningly camouflaged where they extended beyond the area actually enclosed within the *enceinte*.

The water-supply systems at Mycenae, Tiryns and Athens are clear evidence for a concern with siegecraft never before attested during the Aegean Bronze Age, except in the form of an apparently earlier LH II or IIIA underground water source just outside the *enceinte* at Ayia Irini on Keos. The construction of the large galleries at Tiryns, presumably facilities for the storage in quantity of surplus agricultural produce, can be viewed as reflecting the same concern on the part of their builders. A feature peculiar to Mycenae and Tiryns is the construction of a number of small, corbel-vaulted chambers within the thickness of their circuit-walls. At Mycenae, these are located in a stretch of the north curtain-wall, while at Tiryns they occur frequently in the fortification

walls of the *Unterburg*. The function of these chambers is not always clear, nor need it have been one and the same for all. Some were simply storage spaces like the somewhat similar but much larger chambers that comprise the galleries at Tiryns. Others may have functioned as guard-posts. Yet others, furnished with arrow slits, seemingly served as firing positions for archers.



The Lion Gate at Mycenae, made famous by the heraldically opposed felines above it, is in fact carefully arranged so that any potential attacker can be attacked from the salient of the fortification walls that flanks the left-hand (north-east) side of the approach route. The situation was made even more lethal for the attackers by the presence of the rectangular bastion immediately to the right (south-west) of the entrance passage. (Author's collection)

Entrances

The main approach to the citadel was always from the lowest and most gently sloping side, which afforded easy access for both foot and vehicular traffic. Because the entrance at the terminal point of the approach route was precisely at the most accessible, and thus weakest, point of the defences, extra protective measures had to be incorporated in the plan and construction of the gateways there. As a whole, Mycenaean gateways embody the principal functions of a gateway as both a recipient and repeller.

At Tiryns and Gla, access to major gateways in the fortifications is by way of a long, fairly steep and artificially constructed ramp. At Mycenae, such a ramp leading up to the Lion Gate is a natural feature of the local topography at the site. In general Mycenaean gateways were so designed that an attacker would have to present the side on which he would normally carry his offensive weapons (shieldless or right side) toward the defenders in approaching the entranceway. This was achieved through one of two methods. Either by placing the main approach route along the curtain-wall length (Tiryns, Midea), or by projecting a massive bastion to the right of someone entering (Mycenae, Gla). Indeed, the bastion threatening the exposed right side of the enemy was a Mycenaean development and became a regular feature of gateway architecture on the Greek mainland, and was later employed in the Near East.

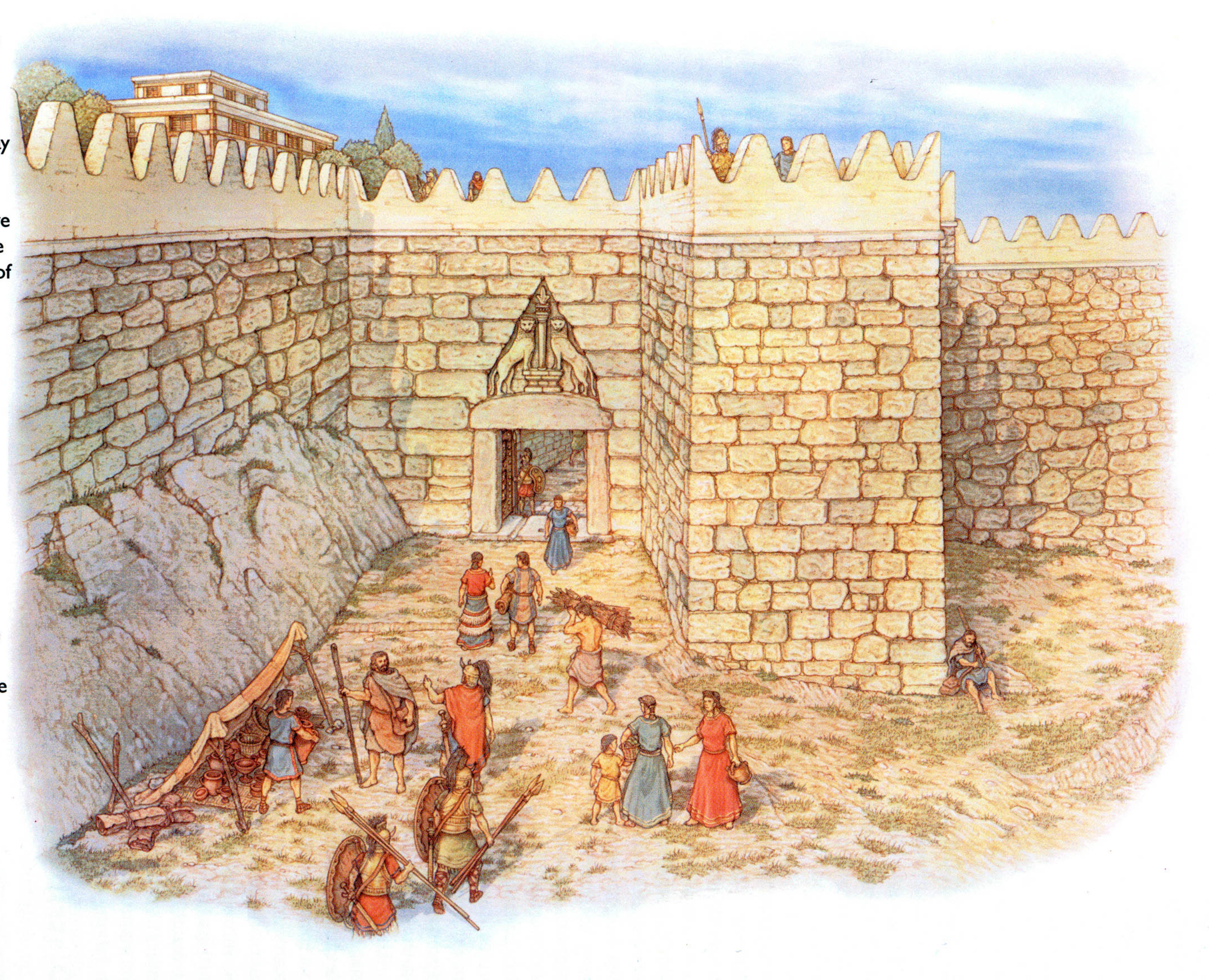
The second, or middle, gateway leading to the palace complex at Tiryns in that site's third phase of fortification is virtually identical in its plan and elevation to the Lion Gate at Mycenae. Most modern commentators view one as a conscious imitation of the other, although it is impossible to state with any degree of certainty which was the first to be built. Both Mycenae and Tiryns have one principle entrance and one minor (or postern) gateway, as well as one or more sally ports in the extensions representing their third phase of fortification construction. Gla is unusual in having four major gateways located at roughly the cardinal points of the compass. This peculiarity is a further indication of a specialised function for this citadel that distinguishes it from the standard Mycenaean citadel. Athens and Midea appear to have been typical in having one major gateway and a postern.

Distribution

The distribution of Mycenaean citadels in the late Mycenaean period is a peculiar one. Such fortresses are common in the Argolid (Mycenae, Tiryns, Midea, Argos, Asine) and in Boiotia (Gla, Eutresis, possibly Thebes and Orchomenos). In Attica there is only the Athenian Acropolis, while in Messenia and Lakonia there are no known LH IIIB fortification systems of any importance. One question which immediately arises is, against whom were such fortifications intended as a form of protection? At least two possible varieties of responses suggest themselves:

- Against attackers from other Mycenaean political entities
- Against attackers from outside the Mycenaean cultural sphere

Lion Gate, Mycenae
Mycenaean fortification systems were designed for visual impressiveness as well as functional efficiency. This reconstruction depicts the principle entranceway of Mycenae, as a visitor entering the citadel would have seen it. Above the massive lintel sits the famous limestone relief of 'heraldic' lionesses flanking a column. The heads, which are of a softer stone such as steatite, face the visitor. To the visitor's right stands the projecting bastion covering the approach route. In times of war this would function as an elevated-fighting platform, thus enabling defenders to pour missile fire into the unshielded right sides of those attempting to force the gate.



Since the Argolid has most often been considered by scholars to be ruled by a single Mycenaean ruler in the LH III period, the second answer has normally been the preferred one.

Support for the notion of an external, non-Mycenaean threat to the Argolid has been seen in the trans-Isthmian fortification wall discovered and partially cleared by O. B. Broneer (1957). Its course was traced for 1km westward from the Saronic gulf, at a location just south-east of the Isthmus at the east end of the Corinth canal. The construction is Cyclopean, that is, a double 'skin' of large rough stones in horizontal courses with an earth and rubble fill. Along a section 45.4m long the wall reaches a thickness of 4m. In another section some 22m long it is preserved to a height of 2.5m. Along the north face of the wall four towers are placed at a distance 7.9 to 9.5m apart. They project 0.7m from the wall and vary between 2.1 to 2.6m wide. Mycenaean pottery shards found in the wall are dated to the latter years of the LH IIIB period. Its construction would then correspond in date to the extension of the fortification walls at

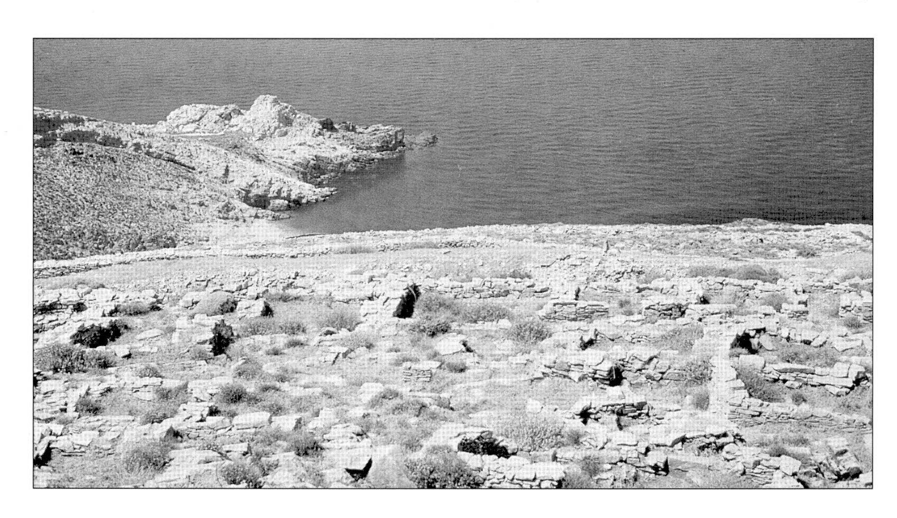
Bronze Age sites of mainland Greece. (© Osprey Publishing Ltd.)



ABOVE The Lion Gate, the principal gateway of Mycenae, showing the projecting bastion covering the entranceway. This elevated fighting-platform enabled the defenders to pour fire into the unshielded right sides of those attempting to force the gate. The bastion was built in pseudo-ashlar style of enormous blocks of conglomerate. This stone comes from natural deposits in the area of Mycenae and, in its natural state, occurs in fairly regularly shaped blocks. These were sawn into shape and laid in regular courses of stretchers and headers. (Author's collection)

Mycenae and Tiryns, and perhaps indicate that there was a threat to the Peloponnese from the north. However, it is by no means impossible that the major Mycenaean centres in the Argolid were each ruled by independent warlords. Therefore these citadels could be viewed as a product of small or divided sovereignties, proliferating at a time when central authority had not been established or is struggling to establish itself.

Greek tradition suggests that there were at one time independent kingdoms based on Thebes and Orchomenos in Boiotia, while in the Argolid we know of legendary kings at Mycenae (Atreus, Agamemnon), Tiryns (Herakles, Diomedes), and Argos (Akrisios). The paramount importance of Agamemnon as leader of a confederacy in Homer's *Iliad*, leading by force of his own character and because of his resources, has led most commentators to assume that the ruler of Mycenae dominated the Argolid. This view has received support from the wealth of the Shaft Graves and the large number of tholos tombs (e.g.



RIGHT Perched on a sheer and isolated hill above the sea, the EC IIIA fortified settlement of Kastri on Syros is one of the possible sources of inspiration for Mycenaean defensive architecture. The site consists of domestic structures crammed inside a double-walled circuit equipped with horseshoe-shaped towers. Constructed of small fieldstones, in the vestigial form of mud-brick construction, the fortification walls were built directly on the bedrock without any preparation or levelling of it. Here we are standing within the settlement looking north towards the fortifications. (Author's collection)

Treasury of Atreus) at that site. Nevertheless, few scholars are now willing to consider Homer a reliable historical source for the Mycenaean period, and the Shaft Graves and most of the tholos tombs are in any case features of the early Mycenaean era and not of the LH III period. It must be remembered that the *Iliad* and the *Odyssey* were composed as epic tales and not historical texts. To use Shakespeare's *Macbeth* as a source for 11th-century Scottish history would rather miss the point of the play, and the same is true of the Homeric epics.

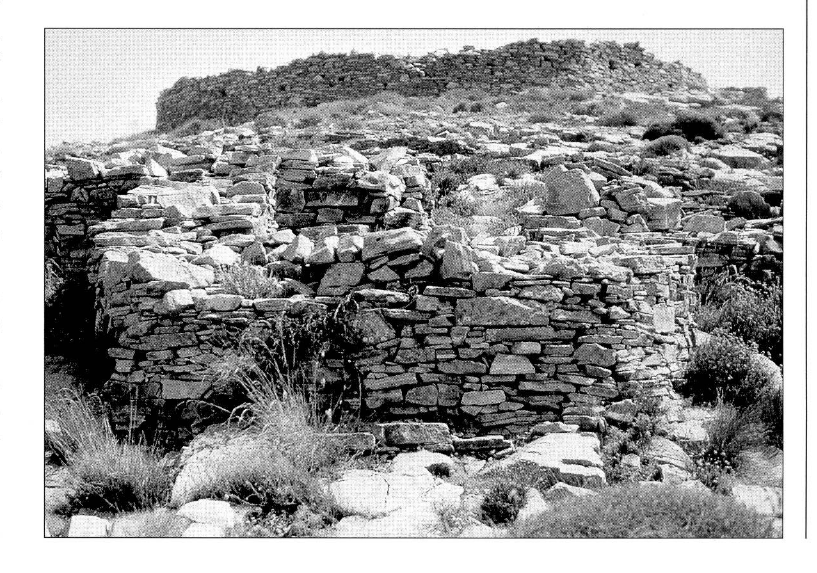
The fortifications and palatial architecture of Tiryns are at least as impressive as those of Mycenae in the later Mycenaean period. Now that Linear B tablets have been discovered at both sites, a fact suggesting that the two may well have maintained independent administrative archives, there seems to be no compelling reason to assume that Tiryns was controlled by Mycenae at this time. If the two were in competition, their similarities in defensive architecture may even be viewed as evidence for an LH III period 'arms race'. At the same time, in Messenia where the Linear B tablets from Pylos suggest that a single ruler controlled the entire region, there is no evidence at all for LH IIIB citadels. Presumably, the ruler of Messenia was confident of his ability to protect his capital by keeping his enemies, whether Mycenaean or non-Mycenaean, far from Pylos itself. On the other hand the rulers at Tiryns, Mycenae, Midea, Argos, Asine, Eutresis, Thebes and Orchomenos, controlling significantly smaller kingdoms and lacking significant buffer zones with which to protect their capitals, felt forced to invest in defensive architecture on a grand scale.

Sources of inspiration

Mycenaean fortification architecture clearly owes nothing to Minoan inspiration. Not only are Minoan fortifications virtually unknown after the end of the Proto-palatial period but all Mycenaean fortification systems date from a period well after the collapse of Minoan power. It is possible that the idea of fortification programmes on a grand scale was adopted from the Hittite sphere of influence in central Anatolia. However, in terms both of scale and of architectural details, Hittite fortifications are quite different from those of the Mycenaean citadels.

Perhaps the most likely sources of inspiration for Mycenaean defensive circuits are the fortification systems at such Cycladic sites as Kastri and Phylakopi. Perched on a sheer and isolated hill above the sea, the EC IIIA fortified settlement of Kastri (near Khalandrianí on Syros) consists of small houses crammed inside a double-walled circuit equipped with horseshoe-shaped towers. The outer wall was built directly on the bedrock without any preparation or levelling of it. The construction is of small fieldstones, in the vestigial form of mud-brick construction, forming a thickness of 1 to 1.1m. At a distance ranging from 4.5 to 6.5m stands the inner wall. Although it too is built of small, unworked stones without any clay binding, it is thicker than the outer strip, varying from 1.4 to 1.6m. It is also built with better defences, as the five towers that are preserved are placed at intervals of 4.5 to 8m apart along its course. Pebbles of various sizes were found in great numbers between the walls and inside the towers. They may have been used as missiles.

On the other hand, much of what is most distinctive about Mycenaean



Like the outer circuit, the inner circuit-wall of Kastri is built of small, unworked stones without any clay binding. However, it is thicker than the outer strip, varying from 1.4 to 1.6m, and has five towers placed at intervals of 4.5 to 8m apart along its course. Of significance is the fact that pebbles of various sizes were found in great numbers between the walls and inside the towers. They may have been used as missiles. Here we see Tower Gamma, looking south. (Author's collection)

Another possible forerunner to Mycenaean defensive architecture is Lerna, an EH II fortified settlement situated on a low artificial mound on the western shores of the Argolid gulf. One of the most important prehistoric sites in Greece, Lerna lies not far from the marshy lake where, according to legend, Herakles slew the Hydra (Hesiod *Theogony* 313–18, Strabo 8.6.2, Pausanias 2.37.4). The fortification (Lerna III) consists of a double ring of walls with gateways and towers. Here we see Tower U, a horse-shaped tower with its distinctive masonry in a herringbone pattern. This in fact is the socle, as it supported a superstructure of sun-dried mud-bricks. (Author's collection)





This shot shows one of the cross-walls than ran between the outer and inner rings of Lerna's EH II fortification system (Lerna III). The socle of the wall consists of small limestone blocks set in a herringbone pattern and bonded with clay. This supports a superstructure of sun-dried mud-brick. The fire that destroyed the site (Lerna IV) towards the end of the EH III period preserved the bricks, which were hardened and are now protected by the terracotta tiles. (Author's collection)

military architecture may in the end prove to be the product of purely indigenous developments from humble Middle Helladic antecedents. In the thriving palatial societies of Mycenaean Greece, military architecture is best understood as serving both practical and ideological functions. Thus monumental fortifications physically protected a citadel, and by extension its territory, but were at the same time a compelling and enduring statement of centralised power, a public display of the conspicuous consumption of wealth and energy, often far exceeding any practical needs.

Mycenaean palace complexes

A Mycenaean citadel was a fortification and residence rather than a mere fortress. The placement of the palace complexes at Mycenae, Tiryns and Pylos on the summits of hills or rocky outcrops could be taken as evidence that having a picturesque view was a common concern of Mycenaean architects. However, it is far more likely that the occupants of these palaces simply wanted their residences to be located physically above any other structure within their capitals as symbols of their own elevated social status. That is, the Mycenaean palace dominates its immediate physical environment in much the same fashion as one imagines that a Mycenaean ruler (the *wanax* of the Linear B tablets) dominated his social one.

Distribution

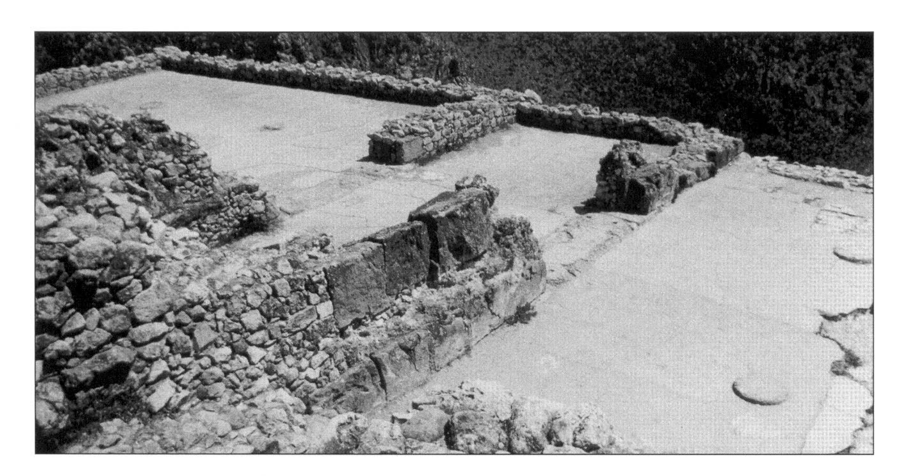
The architectural focus of the Mycenaean palace complex was its central hall, known as a megaron after the Homeric term for the king's hall, rather than a central courtyard as on Minoan Crete, and a visitor to the palace was inevitably steered directly towards it. Mycenaean palatial structures have thus been identified in the following regions of mainland Greece:

- Argolid (Mycenae, Tiryns, probably Midea and Argos)
- Messenia (Pylos)
- Lakonia (the Menelaion)
- Attica (Athens)
- Boiotia (Thebes, probably Orchomenos)

The best-preserved palaces, fully cleared, are those at Pylos and Tiryns. Those at Mycenae and the Menelaion are only partially preserved, while those at Thebes and Orchomenos have been only partially exposed. The palace at Athens has been almost totally destroyed, to the extent that we can say little more than that a palace almost certainly once existed on the Acropolis. A substantial building at Iolkos is claimed to be a palace by its excavator, but the only part of it to have been exposed does not prove it to have been one.

Megaron

The focal point of the socio-political aspect of a Mycenaean citadel was the megaron. The megaron appears at Pylos, Tiryns, Mycenae, and probably at



Built at different levels on the uneven bedrock, the main element of the palace complex at Mycenae was the megaron, with its throne room (seen left) – complete with large circular fixed hearth – anteroom (seen centre) and porch (seen right), and the court (right of shot). Two entrances led to the court, the propylon and west passage to the north-west, and the Grand Staircase to the south. (Author's collection)

Orchomenos. Two smaller, less elaborately furbished megara occur in the so-called palace at Gla. The characteristic features of this architectural unit are:

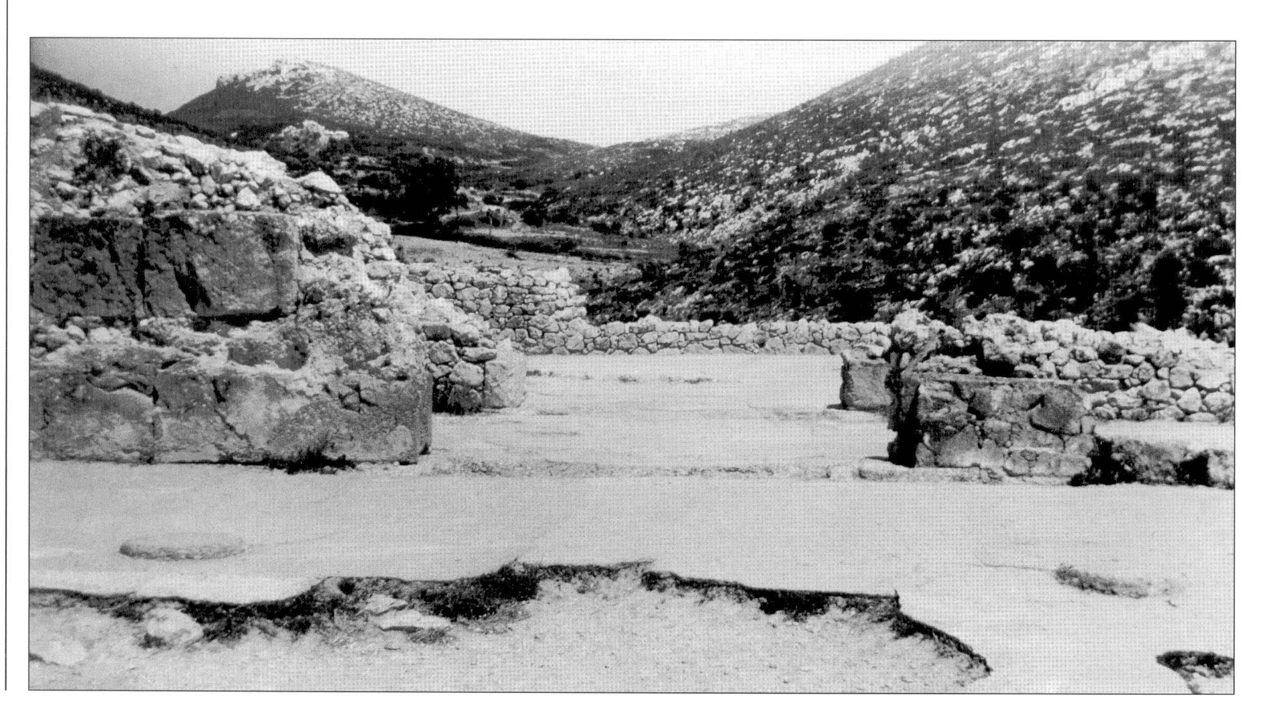
- Tripartite division into porch, anteroom and throne room, all constructed on a rigid axis
- Large circular fixed hearth, centrally located in the throne room
- Four columns arranged in a square around the hearth
- A throne against the middle of the right-hand wall in the throne room (Pylos, Tiryns, probably Mycenae)
- Plastered floors decorated with painted patterns throughout the unit (Pylos, Mycenae, Tiryns)
- Access to the throne room only from the anteroom, through an axially placed doorway
- Two columns between *antae* in the porch
- Rich decorative embellishment of the walls throughout the unit by means of frescoes

This unit seems likely to have been the place where the ruling authority resident in the palace held court. There is a megaron at the Menelaion, but this lacks a central hearth, columns, and most of the other features listed above. However, the palatial building there is closely comparable in its overall design to the architectural layout of the palace at Pylos. If indeed it is a palace, then the Menelaion ranks as one of the earliest examples.

Court

A large court lies directly in front of the megaron at Mycenae, Tiryns and Pylos. Colonnades surround this court on three and a half sides at Tiryns, on two and a half sides at Pylos, and probably on just one and a half sides at Mycenae. The court is entered at both Tiryns and Pylos from a propylon placed slightly off the short axis of this rectangular feature. At Mycenae the court is entered either by means of a corridor or from the top of the Grand Staircase, a monumental stairway of two flights, which provided access from the terrace below to the south.

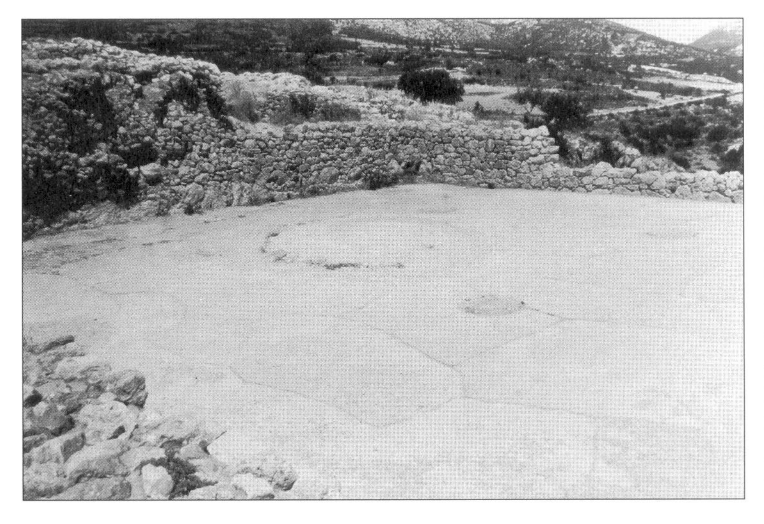
Because of the summit's sheer sides to the south and east, the megaron at Mycenae was partly erected on a massive artificial terrace. Looking east from the court, this view takes in the three characteristic elements of the megaron unit: the porch (seen front); anteroom (seen centre); and the throne room (seen rear). (Author's collection)



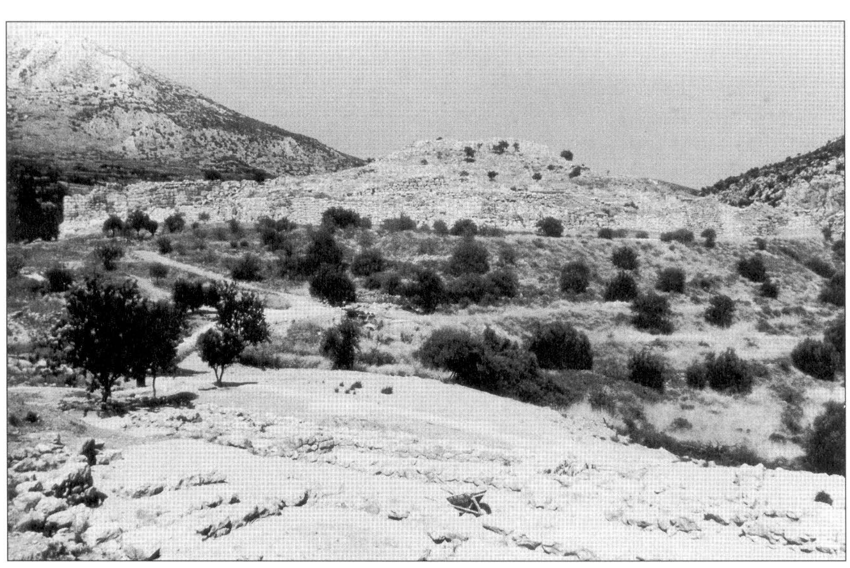
Function

Many scholars have argued that the Mycenaean palace complexes were centres of massive redistributive operations for subsistence commodities. The fact that the Linear B tablets show large amounts of agricultural products and goods, including luxury items, entering into and exiting from the palaces certainly strengthens this view. However, the theory remains questionable and one recent study (Halstead 1992) distinguishes between the highly specialised economies of the palaces, which concentrated on large-scale cultivation of a few crops and the production of perfumed olive oil, fine textiles, and other craftwork, and the mixed economies of the ordinary settlements. These were not directly controlled from the palaces but interacted with them, providing some foodstuffs in taxes and others, like pulses, on an irregular basis. To judge from the Pylos tablets, which provide most of the documentary information, the palace directly maintained a workforce of many hundreds, and controlled most of the distribution and working of bronze. Despite the lack of mineral resources in most of Greece, the Mycenaeans used metal in astonishing quantities and the search for copper and tin, as well as gold, was one of the factors underlying the extensive pattern of maritime trade.

We should never underestimate the symbolism of power expressed in Mycenaean palaces, however, especially with regards to the basic scheme upon which these residences were built. The overall plan was based upon the principle of ascent towards the ruler, beginning at the point of entry through a well-fortified gateway and leading along narrow streets and up stairways before the summit of the citadel is reached. There the visitor finally entered the sizeable megaron, with its central hearth and throne positioned to one side. The impression gained by the visitor called to the ruler's presence was further heightened by the lavishly decorated interior, which flaunted images designed intentionally to demonstrate the political and religious power of the ruler.



The megaron at Mycenae, looking north-east from the anteroom into the throne room. In the centre is visible the elevated central hearth, which was once surrounded by four stuccoed wooden columns. These columns rested on stone bases, three of which are still preserved. The throne probably stood in the middle of the south wall, to the right as the visitor entered. (Author's collection)



Beyond Mycenae's fortification walls three buildings with extensive basements stood on a Cyclopean terrace at the foot of the west slope. Archaeological evidence suggests these once belonged to wealthy merchants of the LH IIIB period. Here we see the foundations of the House of the Shields, which yielded carved ivories, many in the shape of the figure-of-eight shield. The building conforms to the usual Mycenaean technique: rubble packed with clay supporting a timber frame filled in with sun-dried mud-brick. (Author's collection)

The Sites

The Catalogue of Ships

The Catalogue of Ships forms part of the second book of the *Iliad* (lines 494–759), and is a muster list of the leaders of the Achaian army encamped outside Troy, the places from which their men came, and the number of the warships they commanded.

This roll call (of 29 contingents, 44 warlords, 175 cities and other localities, 1,186 warships, and some 100,000 men) was not created for its present place in the *Iliad*. The evidence for this is threefold:

1. Contingents that are important here have no specific part to play in the rest of the *Iliad*. In particular the Boiotians head the list in the Catalogue, and are given the largest number of named leaders and cities, but their significance in the *Iliad* is not great.
2. The imperfect tense throughout and the insistence on the number of ships would better suit the assembly of the whole force at Aulis than the situation found in the *Iliad*, that is, the 10th year of the war.
3. In three cases the poet has inserted lines to assimilate the Catalogue to the *Iliad* situation. He had to do this because three of the original leaders are not appearing on the field of battle this day, namely Achilles (refuses to fight), Protesilaos (dead), and Philoktetes (exiled).

These considerations lead to the belief that a separately existing catalogue has been inserted into the *Iliad*, with a few modifications, which we can see, and perhaps others, which we cannot.

If this is so, where did the Catalogue come from? There is evidence associating 'catalogue poetry' with Boiotia and the school of Hesiod (e.g. *The Catalogue of Women*). Our Catalogue begins with the Boiotian contingent, and puts more emphasis on it than could be justified by the Boiotians' insignificant part in the *Iliad* or in any other version of the Trojan War known to us, such as the *Kypria*, the *Ilias parva* and the *Iliupersis*.

More importantly, what about the geopolitical information in the Catalogue? All shades of opinion are held, ranging from those who argue that the Catalogue is a poor invention interpolated into the *Iliad* by a late and decadent poet, to those who see in it a miraculously preserved record of the historical army of Agamemnon in descriptions preserved through oral tradition. While the latter is certainly an overstatement, it is probably nearer to the truth. Because of the general conformity with our knowledge of the Mycenaean world, and because of a number of descriptive epithets for cities whose very existence has been forgotten in historical times, we may accept that the Catalogue contains (preserved down the centuries in verse) invaluable evidence about Bronze Age Greece in the late Mycenaean period.

The Catalogue divides the Achaian world into five major geographical areas:

1. Mainland Greece north of the Isthmus (*Iliad* 2.494–558)
2. The Peloponnese (*Iliad* 2.559–624)
3. The western islands and western Greece (*Iliad* 2.625–44)
4. Crete and south-eastern Aegean islands (*Iliad* 2.646–80)
5. Northern Greece (*Iliad* 2.681–759)

If we look at the map of the whole area, we see that this is a spiral, clockwise description by groups of contingents, with the south-eastern islands inserted out of order. It is of great interest that the other islands of the Aegean and the cities of Anatolia (both of considerable importance in historical times) are not mentioned at all. Whatever its origins and its relationship to the rest of the *Iliad*, it all adds to the impression that this Catalogue reflects the state of the Greek world at a particular time in history, namely Mycenaean Greece.

A number of clues suggest that the Catalogue does indeed reflect the political geography of Mycenaean Greece. Many of the named heroic kingdoms do equate to the later historical geo-political groupings. Nestor's Pylos, for instance, resembles the area prior to Spartan domination. Agamemnon, on the other hand, is not only the ruler of Mycenae but also 'lord of many islands and over all Argos' (*Iliad* 2.108) and of 'wealthy Corinth' (*Iliad* 2.570). Unfortunately, however, no geopolitical arrangement corresponds to Agamemnon's kingdom in historical Greece; Mycenae naturally fell under the control of Argos, while Corinth was independent. Furthermore, the Arcadians were normally regarded by Homer as a single, unified race (*ethnos*), but during historical times found it natural enough to squabble amongst themselves. Above all, certain locations are not even mentioned in Homer at all: Phleious, Megara, Tanagra, Chaironeia, Pharsalos, and Larissa are examples of important historical centres not listed in the Catalogue.

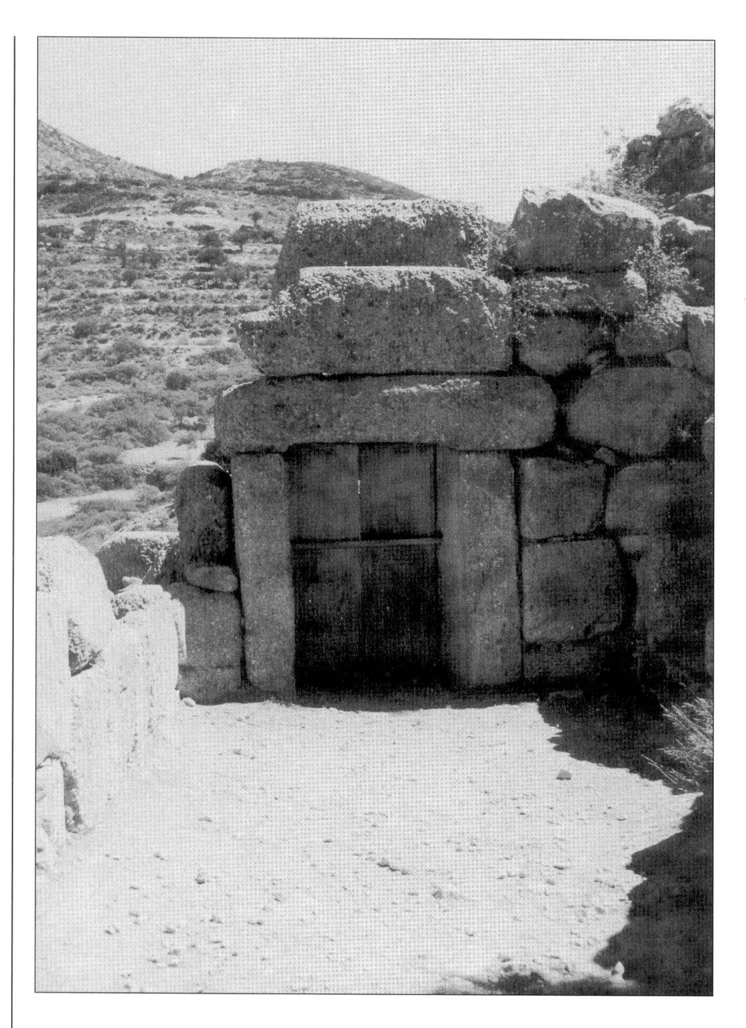
On the other hand, of the 175 names contained in the Catalogue only some 40 were unknown in historical Greece, and perhaps more significantly 90 of the remaining 135 can be shown to have been inhabited in the Mycenaean period. Indeed, of those that have been excavated, none has so far failed to produce evidence of Mycenaean occupation, and of these, roughly one-third have so far failed to produce evidence of subsequent Iron Age occupation. Caution must be practised, however. Even though archaeology seems to prove a Mycenaean origin for at least a part of the Catalogue, finding evidence can be a hit-and-miss affair that relies on seeking pottery shards, the most abundant and durable of Mycenaean artefacts, through surface exploration.

Two possibilities exist for why 40 sites appear not to exist. Either they are fictitious, or are real places that are lost to time through some natural or man-made disaster. Strabo sums it all up very nicely when he remarks that 'three of the cities mentioned by the poet, "Rhipe and Stratia and windy Enispe", are not only hard to find, but are no use to any who find them, because they are deserted' (8.8.2).

One such example from the Catalogue seemingly lost to time was 'sacred Krisa' (*Iliad* 2.520). A Homeric hymn dedicated to Pythian Apollo describes the archer-god passing Krisa, which is perched upon a rocky spur of Mount Parnassos that overhangs a deep and rugged plain, on his way to Delphi (*Hymn to Apollo* 282–85, cf. Pindar *Pythian Odes* 5.34–35). The literary tradition led scholars to believe that Krisa was located somewhere near Delphi, and French excavators subsequently confirmed this when they discovered, on the acropolis site at Khrissó, a Mycenaean citadel that had been destroyed by fire during the LH III period.

Mycenae

The building of Mycenae is attributed by the legends to the Gorgon-slaying Perseus, the son of Zeus and of Danaë, daughter of Akrisios king of Argos (Apollodoros *Bibliotheca* 2.4.4, Strabo 8.6.19, Pausanias 2.15.4, 16.3). Although inhabited since the Neolithic period, Mycenae is a citadel known to archaeology as the seat of the great Helladic civilisation and to tradition as the capital of Agamemnon. There is some debate about how much power Mycenae had over the other citadels (and, indeed, whether it was the 'main' capital of Mycenaean Greece), but whether it ruled over or merely had a trading partnership with Pylos, Knossos and the other citadels, the material culture was essentially the same.



The inner façade of the North-East Postern, Mycenae's secondary gateway, which served as a ready access to the copious spring just beyond the walls to the north-east. Although much smaller, this gateway seems in style of building to be contemporary with the Lion Gate, that is, it was part of the second building phase (mid LH IIIB). (Author's collection)

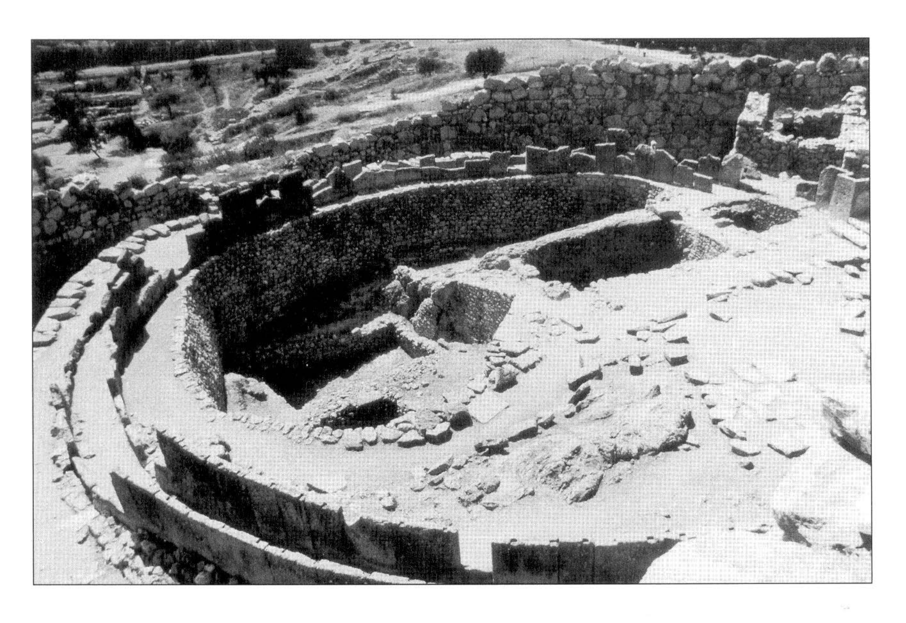
Armed with a copy of Pausanias' *Periegesis*, Schliemann (1874–76) initiated the earliest systematic excavations at Mycenae, which uncovered the Lion Gate and five of the six Shaft Graves of Grave Circle A. He was succeeded by P. Stamatakis (1876–77), and digging was continued by the Greek Archaeological Service under C. Tsountas (1884–02). British involvement with Mycenae begins with the excavations of A. J. B. Wace (1920–23), then director of the British School at Athens. The impetus to excavate at Mycenae came largely from Sir Arthur Evans, who at that time was interested in the relationship between the mainland Bronze Age culture contemporary with the Minoan remains he was excavating at Knossos. The second period of British School excavations was again carried out under the direction of Wace and was begun in 1939, but because of the interruption of World War II the subsequent seasons were 1950 to 1955. Lord William D. Taylour directed the third period of British School excavations in cooperation with his colleague G. E. Mylonas of the Archaeological Society of Athens (1959–60, 1962, 1964, 1966, 1968–69). In recent years a joint project directed by E. B. French (British School) and S. E. Iakovidis (Archaeological Society of Athens) has sought to map out in great detail the antiquities of Mycenae and its immediate surroundings.

Topography

Mycenae was built for command and control. Crouching on top of a fairly steep triangular-shaped hill (278m), the citadel lies some 15km from the sea, half-hidden in a mountain recess between two triangular peaks, Profitis Ilias (750m) on the north and Mount Zara (600m) on the south. Mycenae, in the words of Homer, was 'at ease deep in the recess (Homeric Greek *mýchos*) of horse-pasturing Argos' (*Odyssey* 3.263), which is supposed by some modern commentators to be the origins of the name. Its retired position, therefore, was one of great importance. In the first place it oversaw the fertile Argive plain, and secondly it controlled the communications north through the mountains to Corinth and the Isthmus. The citadel, which Homer calls 'rich in gold' (*Iliad* 7.180, 11.46), 'well-built' (*Iliad* 2.569) and 'broad-streeted' (*Iliad* 4.52), was proverbial in Classical times for its wealth. At its zenith Mycenae consisted of a heavily fortified administrative centre with further settlements scattered beyond the *enceinte*.

The *enceinte*

The Cyclopean circuit-wall is preserved for its whole extent. There is a gap along the precipitous south-east slope where there is no need of fortification. Built of the dark-coloured limestone of the surrounding mountains, the 900m circuit follows the contours of the rock and encompasses an area of some 30,000m^2 (*c.* 3ha). In general it varies in height between 4.5 and 10.5m, reaching some 12m on the south-west side. The thickness mostly varies from 3 to 7m but in places on the north and south-east sides the circuit-wall is as much as 10 to 14m in width. There are two gateways, the Lion Gate at the



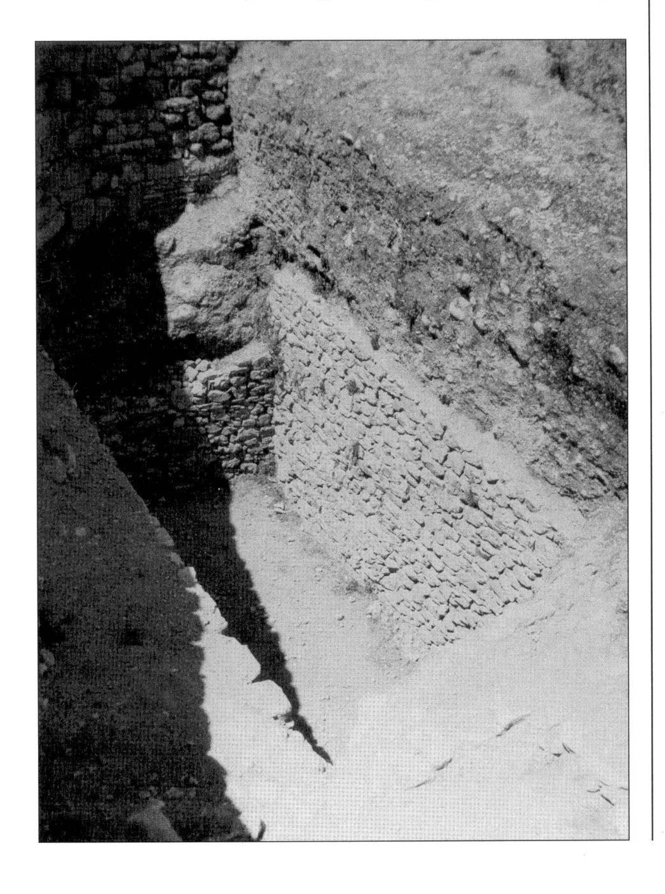
LEFT Grave Circle A lies directly inside and to the right of the Lion Gate, Mycenae. It contains six shaft graves, which held 19 inhumations: nine men, eight women and two infants. The *enceinte* was extended in *c.* 1250 BC (mid LH IIIB) to incorporate the circle within the confines of the citadel; earlier it had stood outside. The incorporation of the burial site, which was now replanned as a monument, was probably an attempt by later rulers to appropriate the 'heroic past' as their own. (Author's collection)

BELOW Cut perpendicularly in the bedrock to a depth of 7.5m, the shaft graves of Grave Circle A date to circa 1550–1450 BC (LH I–IIB) and reveal that extensive trading practices and impressive wealth – the gold artefacts alone weigh around 18kg – existed even in the early Mycenaean period. Found in these six graves were objects representing, or at least inspired by, Mycenaean, Minoan, Cycladic, Hittite and Egyptian cultures. This is Shaft Grave V from which Heinrich Schliemann recovered the Mask of Agamemnon. (Author's collection)

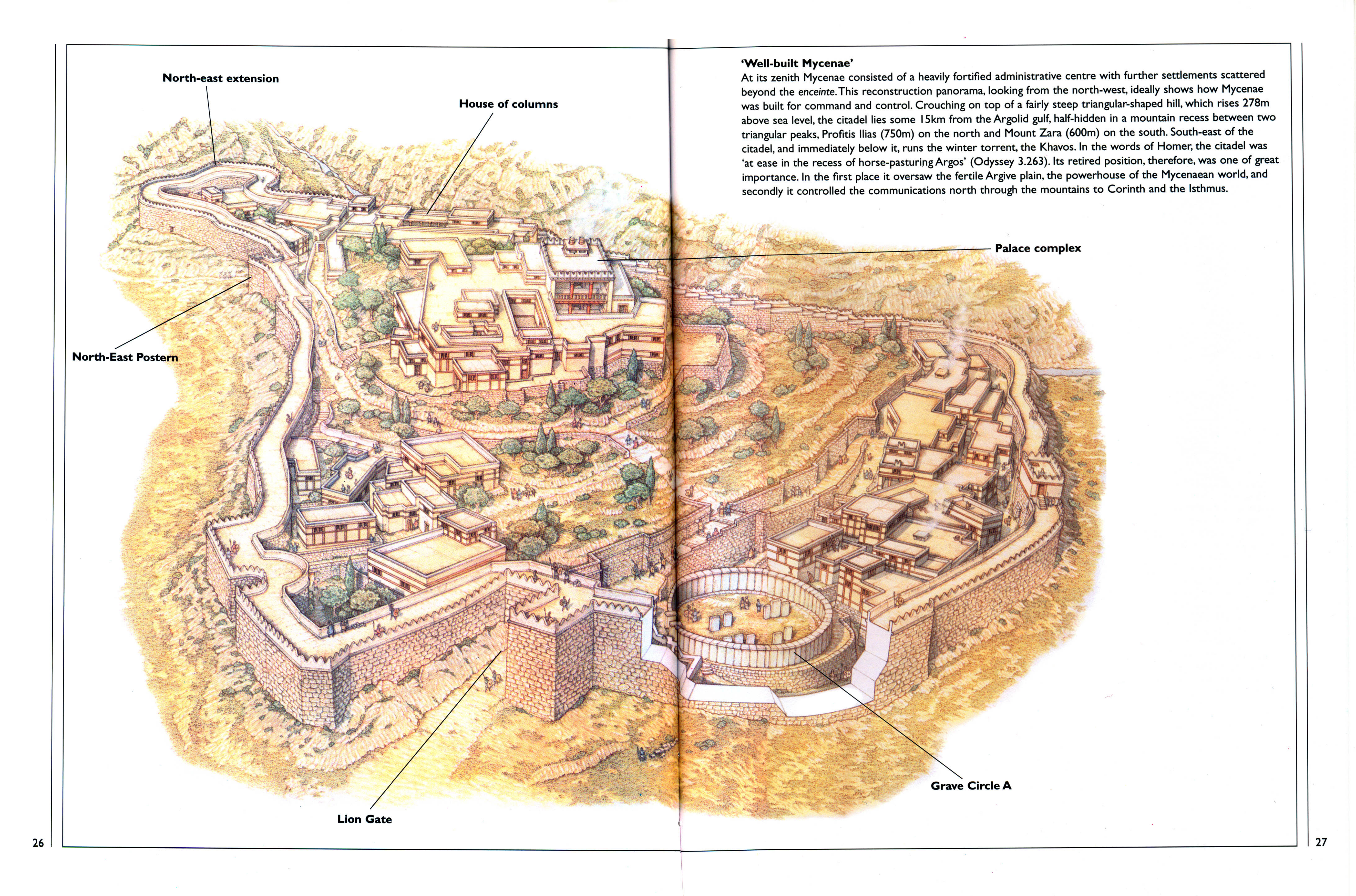
north-western angle and the North-East Postern on the north side, and two sally ports in the north-east extension.

Gateways

The Lion Gate was built during the second building phase (mid LH IIIB) when the circuit-wall was extended so as to include the rich and elaborate burials of Grave Circle A. Presumably the later rulers of Mycenae promoted themselves as the direct descendants of those interned here. The plan of the Lion Gate ideally illustrates the Mycenaean principle of mural defence, namely the throwing out of a strong bastion on the shieldless or right side of attackers. On the left side a salient of the circuit-wall covers the approach to the gateway, while a terrace wall inside and left of the entrance allowed defenders to hurl down missiles on attackers who managed to funnel through the gateway.

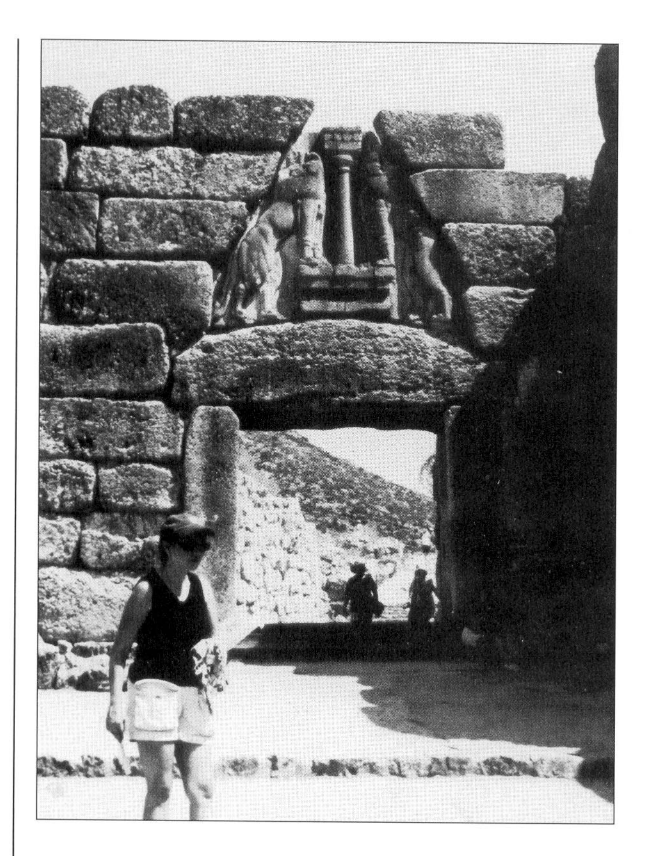


The entranceway is composed of four massive slabs of local conglomerate stone, which had been sawn in rectangular blocks and squarely cut at the corners. These blocks make up a threshold, two vertical doorjambs (3.2 by 1.7 by 0.54m) and a lintel (4.5 by 1.9m by 0.8m). Above the latter the wall was corbelled to leave a relieving triangle, in which is set the famous limestone relief of lions (more properly, lionesses) flanking a column. The heads, set separately, probably of a softer stone such as steatite, are missing but would have faced the approaching visitor. In the lintel and threshold are pivot-holes for a double-leafed gate. The doorjambs slope inwards to provide an opening that narrows from 3.1m at the bottom to 2.95m at the top. In the doorjambs are rectangular sockets to hold a sliding wooden crossbar, which could keep the gate (wood reinforced with bronze plates) securely shut. There are also oblong sockets into which the gate-handles would sink when the gate was kept wide open. The threshold was scored to give foothold and rutted either side for chariot-wheels.



'Well-built Mycenae'

At its zenith Mycenae consisted of a heavily fortified administrative centre with further settlements scattered beyond the *enceinte*. This reconstruction panorama, looking from the north-west, ideally shows how Mycenae was built for command and control. Crouching on top of a fairly steep triangular-shaped hill, which rises 278m above sea level, the citadel lies some 15km from the Argolid gulf, half-hidden in a mountain recess between two triangular peaks, Profitis Ilias (750m) on the north and Mount Zara (600m) on the south. South-east of the citadel, and immediately below it, runs the winter torrent, the Khavos. In the words of Homer, the citadel was 'at ease in the recess of horse-pasturing Argos' (Odyssey 3.263). Its retired position, therefore, was one of great importance. In the first place it oversaw the fertile Argive plain, the powerhouse of the Mycenaean world, and secondly it controlled the communications north through the mountains to Corinth and the Isthmus.



A close-up view of the Lion Gate, showing the 'heraldic' lions (in truth, lionesses). Dated to *c.* 1250 BC (mid LH IIIB), the gateway belongs to the second building phase when the circuit-wall was extended so as to include the rich and elaborate burials of Grave Circle A. Carved on a thin slab of limestone and set in the relieving triangle above the lintel, the composition has been variously interpreted: as purely decorative; as cultic, the column between the rampant felines being an aniconic representation of the Great Mother Goddess; and finally as heraldic, representing either the unification of two powerful kingdoms, or the palace, the ruler and his family flanked by the guardian lionesses. (Author's collection)

The North-East Postern served as a ready access to the copious spring just beyond the walls to the north-east, the Peresia (named after the founding-hero Perseus), and, although much smaller, seems in style of building to be contemporary with the Lion Gate. The plan is similar in having a projecting bastion on the right of an approaching attacker, but there is no relieving triangle. The entranceway, like that of the Lion Gate, consists of four great slabs of conglomerate – lintel, threshold and two doorjambs. In the lintel (2.99 by 1.41 by 0.64m) and the threshold are pivot-holes for a double-leafed gate and a drain runs beneath it. Both doorjambs taper slightly inward at the top and there are sockets for a wooden crossbar to fasten the gate within.

Interior

The palace complex on the summit of the citadel would certainly have been conspicuous; part of it was built on an artificial terrace supported by the east curtain-wall. From the entrance on the west side a corridor runs south and then east to a court paved with stucco and divided off into squares painted with geometric patterns. The monumental stairway (Grand Staircase) south of the court may have been the official entrance. To the west of the court lies a suite of rooms thought to be a guest suite, while to its east stands the megaron. Measuring externally 23 by 11.5m, this unit consists of the characteristic porch, which had two wooden columns, an anteroom and the throne room. A circular hearth surrounded by four stuccoed wooden columns dominated the latter. On analogy with Pylos and Tiryns a throne would have stood in the middle of the right-hand wall. There would have been hunting and battle scenes painted on the walls and gypsum slabs on the floor.

On a lower terrace at the east end of the citadel is the so-called House of the Columns, a building of unusual plan but apparently a residence of high status and quality. The house is entered from the north through an imposing doorway into a long corridor leading to an open court with the columns from which the house is named. Opening onto the court is a pair of large rooms, from one of which there is access to a stair and at least one small room. The south part of the house is on three levels of which the basement was devoted to storage. This is demonstrated by some of the few examples of the Linear B script from within the citadel – two transport stirrup jars, vessels that usually held olive oil, and a clay tablet listing 'cloths of KO-U-RA type' (the exact meaning is still unknown). Next-door stood the so-called Artisans' Quarters, a structure of unusually large rectangular plan in which a very considerable amount of raw materials and workshop debris was found.

The extension

The extension of the citadel to the north-east belongs to the final building phase (end LH IIIB). It includes two sally ports, one near the south-east angle of the new wall, the other on the north, and the 'Secret Cistern' to the north-west, all three paralleled in style of building by the Tiryns galleries.

The South Sally Port pierces the curtain-wall at right angles via a long, narrow and unobtrusive passage through its thickness. The passage roof has corbel vaulting. At either end the passage was probably guarded by reinforced wooden doors, which, when opened, would allow the defenders to slide through singly if the need arose. The North Sally Port runs obliquely through



LEFT The inner façade of the Lion Gate, showing the conglomerate lintel estimated to weigh in excess of 20 tonnes. Above the lintel block, so as to reduce the load resting upon it, the wall was corbelled to leave a relieving triangle, in which is set the famous limestone relief of lions (more properly, lionesses) flanking a column, the back of which is seen here. (Author's collection)

the curtain-wall and is low and pretty narrow. It was originally thought to have been a man-size drain but is more likely to have been an exit, as demonstrated by the wear and tear on the inner and outer thresholds.

The Secret Cistern is approached by an oblique passage through the curtain-wall, descending 18 steps north-west followed by a horizontal passage of 2.5m, which in turn leads to 20 steps west, three steps north-west and, finally, 60 steps north-east, all of which were cut through the bedrock. At the bottom is a rectangular shaft, which once served as a cistern. Water flowed via gravity-fed pipes from springs in the hills to the east, thereby bringing fresh water supplies within the citadel. The cistern itself is not large, but the capacity was enormously increased when the water was allowed to flood the whole of the lower flight of steps where the rock vault rises to a height of over 3.6m. To prevent seepage this part of the staircase was covered with waterproof cement. Invisible from the outside, the Secret Cistern was obviously designed and built so that the citadel could better withstand the rigours of a siege, which strongly suggests the Mycenaeans of this period were anticipating troubled times ahead.



ABOVE When the inhabitants realised that Mycenae lacked an adequate supply of water to withstand a prolonged siege, they remedied the problem by extending the fortifications to the north-east, the third and final building phase of the citadel (end LH IIIB). Fresh water was then transported via gravity-fed pipes from springs in the hills to the east to a subterranean cistern. Known as the Secret Cistern, this was excavated just outside the new fortification walls, and was accessed via an elaborate descending stepped passage with a concealed entrance, seen here, just inside the curtain-wall. (Author's collection)



Tiryns

According to legends, Tiryns was the oldest of the Mycenaean citadels of the Peloponnese. In one legend it is Tiryns, and not Thebes, that is recorded as the birthplace of Herakles, later serving as the base for his labours (Apollodoros *Bibliotheca* 2.4.12). Systematic excavation of the site began when Schliemann, with his collaborator Wilhelm Dörpfeld, turned his attention to Tiryns (1884–86). The German Archaeological Institute in a number of prolonged campaigns (1905–14, 1926–29, 1967–86) has lain bare much more of the site.

Topography

Tiryns squats menacingly on a long, low, rocky height (27m) to the south of the Argive plain near the innermost cove of the Argolid gulf. The hill rises like an

ABOVE The citadel of Mycenae and the surrounding area. (© Copyright Osprey Publishing Ltd.)

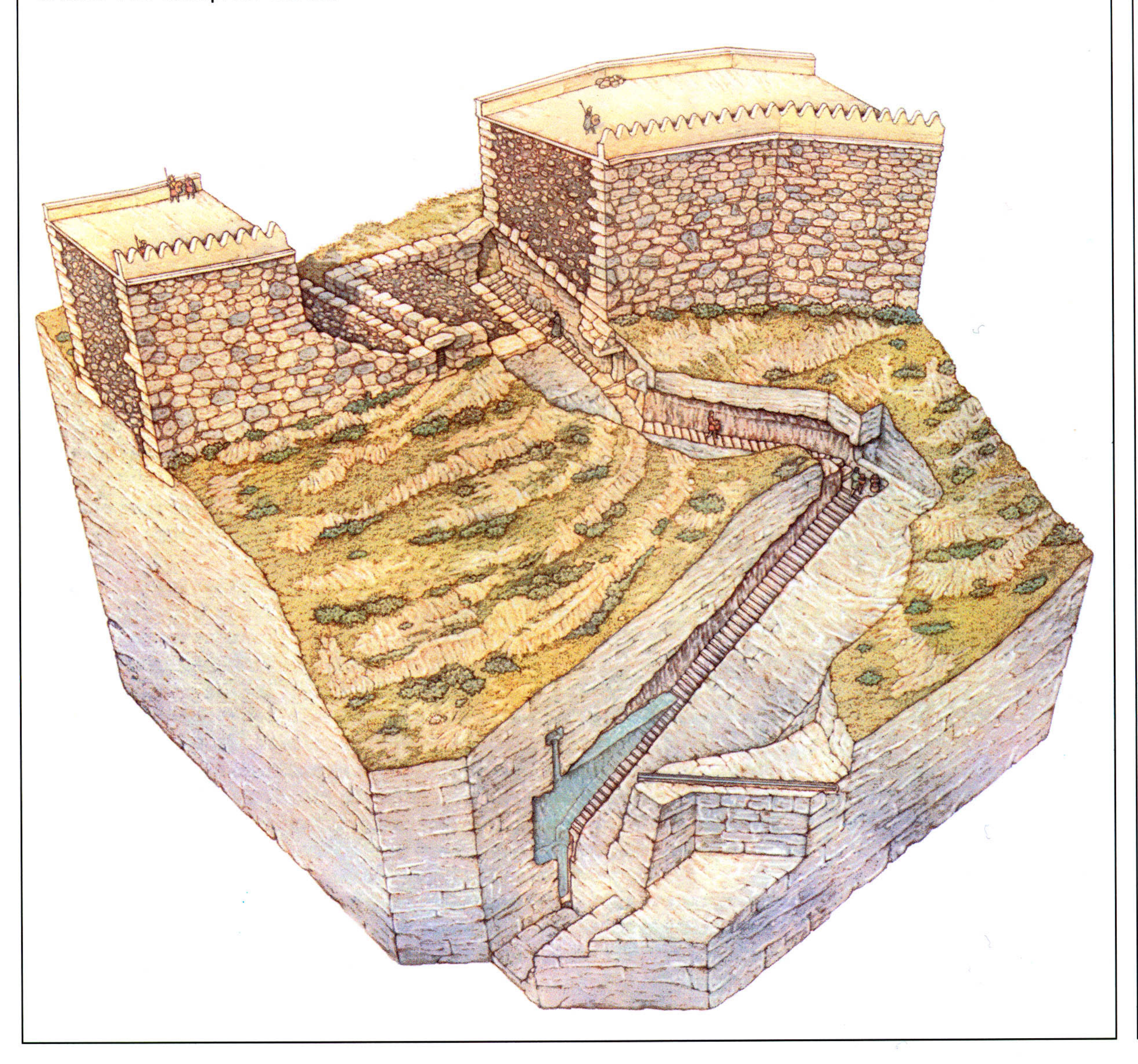


RIGHT Of the two sally ports that pierce Mycenae's north-east extension, this, the South Sally Port, is the more monumental. Once thought to be a secret, or at least concealed entrance, it is, in truth, anything but hidden, as the area it leads to is unsuitable for tactical manoeuvring. A systematic investigation of this area demonstrated that there was a low terrace covering the uneven surface of the bedrock in front of the curtain-wall. This afforded a view over the ravine of the Khavos and served the ends of both security and relaxation. (Author's collection)

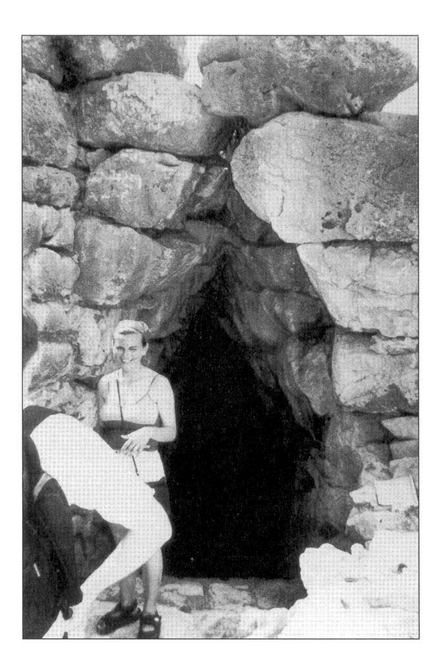
island out of the plain and the geoarchaeological work of E. Zangger has demonstrated that the coastline in the Mycenaean period was less than 1km from Tiryns. Always famous for its great walls, Homer speaks of 'wall-girt Tiryns' (*Iliad* 2.559), while Pindar stands in awe of the 'Cyclopean doorways' (fr. 169.6

The Secret Cistern, Mycenae

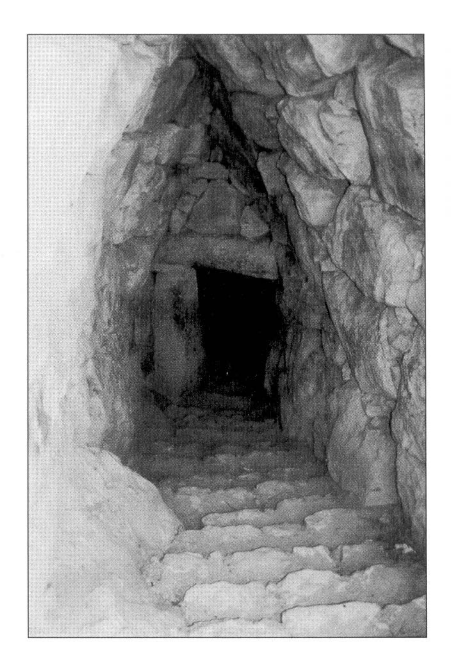
A major feature of the north-east extension, built in Mycenae's third and final phase of fortification building, was the inclusion of a tunnel leading from within the *enceinte* to an underground water source outside the walls. As this cutaway reconstruction shows, the Secret Cistern is approached by an oblique passage through the north curtain-wall. The tunnel then descends 18 steps north-west followed by a short horizontal passage, which in turn leads to 20 steps west, three steps north-west and, finally, 60 steps north-east. At the bottom is a rectangular shaft, which serves as a cistern. Water flows via gravity-fed pipes from springs in the hills to the east of the citadel, thereby bringing fresh water supplies within the fortification walls. The cistern itself is not large, but the capacity is enormously increased when the water is allowed to flood the whole of the lower flight of steps where the rock vault rises to a height of over 3.6m. To prevent seepage this part of the staircase is covered with waterproof cement.



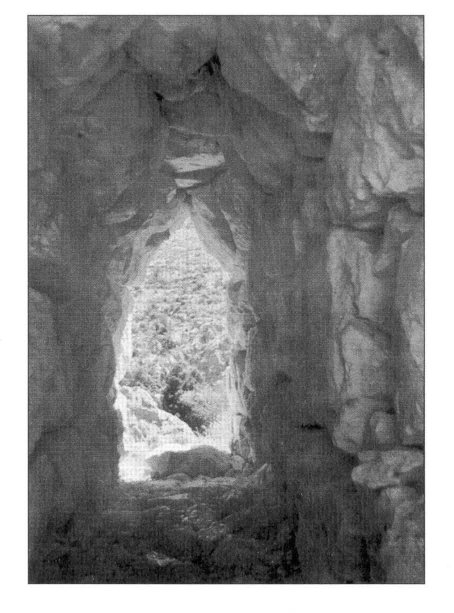
RIGHT The entrance to the Secret Cistern ideally demonstrates the principles of the corbelled arch, one of the main characteristics of Mycenaean megalithic construction. Corbel vaulting is the projection of each successive course of stones slightly beyond the course below, so that the wall is stepped upward and outward. As the centre of gravity of the whole tended to move beyond its base as each course was added, counterbalance was provided by piling increasing thicknesses of masonry around the exterior. (Author's collection)



TOP RIGHT The staircase down to the Secret Cistern starts inside the *enceinte* and goes down below the north curtain-wall, constantly changing direction. This shot shows the first of three sections that make up the staircase. This section begins with a corbelled entrance, which allows access to the corbelled tunnel seen here. The 16 irregular stone steps lead obliquely down through the curtain-wall to a door, built in the Cyclopean style, which gives onto a narrow landing roofed with horizontal slabs. At this point the second section starts. (Author's collection)



BOTTOM RIGHT The South Sally Port pierces the south curtain-wall at right angles via a long, narrow and unobtrusive passage through its thickness. The passage roof has corbel vaulting. At either end the passage was probably secured by reinforced wooden doors, which, when opened, allowed the defenders to slide through singly as the need arose. (Photograph Esther Carré)

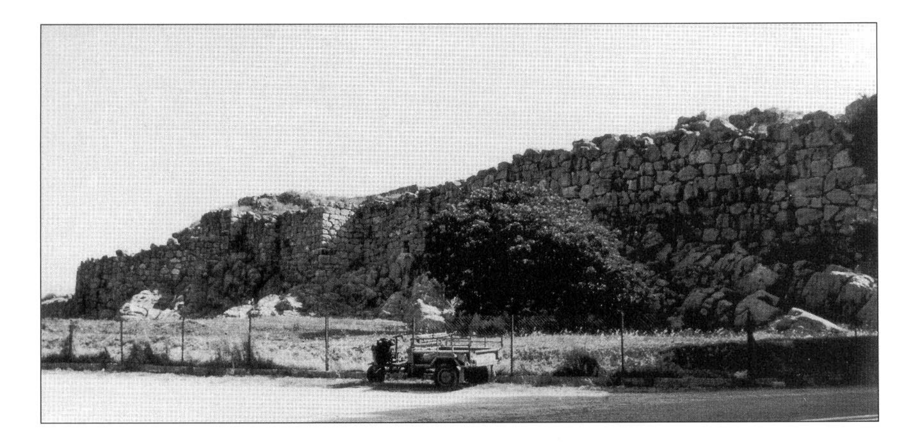


Sandys). Pausanias (9.36.3) considers the fortification walls are no less deserving of respect than the pyramids of Egypt. Elsewhere, he describes the walls as consisting of natural rocks 'so huge that a pair of mules would not even begin to shift the smallest' (2.25.7). And despite the ravages of time, Tiryns' Cyclopean walls remain the finest specimens of the military architecture of the Mycenaeans.

The *enceinte*

After piecemeal fortification of the higher southern part of the hill and the founding of a palace during the earliest palatial period (LH IIIA), the entire summit was encircled by the splendid Cyclopean walls still visible today (LH IIIB). Built of red and grey limestone, which is abundant on the hillock itself and on the hill of Profitis Ilias just east of the site, the circuit-wall of the third and final building phase (Citadel III) represents the apogee of Mycenaean military architecture. Encompassing an area of 23,000m^2 (2.3ha) the circuit-wall runs for some 725m around the brow of the hill. It is composed of irregular boulders of varying dimensions, laid as far as possible in horizontal courses. The stones, the largest of which are estimated to weigh over 14,000kg, are partially hammer-dressed. Smaller stones bonded with clay mortar fill the interstices. Round the *Unterburg* the walls are 7 to 8m thick and stand directly on the bedrock. Those round the irregular Upper Citadel, where towers, salients and re-entrant angles break their line, vary in thickness from 4.5 to 17m, in many places they average 7.5m, and stand to about half their original height of around 10m.

In two locations the fortification walls of the Upper Citadel contain galleries (East Gallery, South Gallery). The East Gallery is a long narrow passage (29.1 by



The earliest of all the Mycenaean citadels, Tiryns served as the archetype on which the others were modelled. The citadel is most impressive from below, and here we see the conspicuous remains of the west curtain-wall looking from the south-east. (Author's collection)

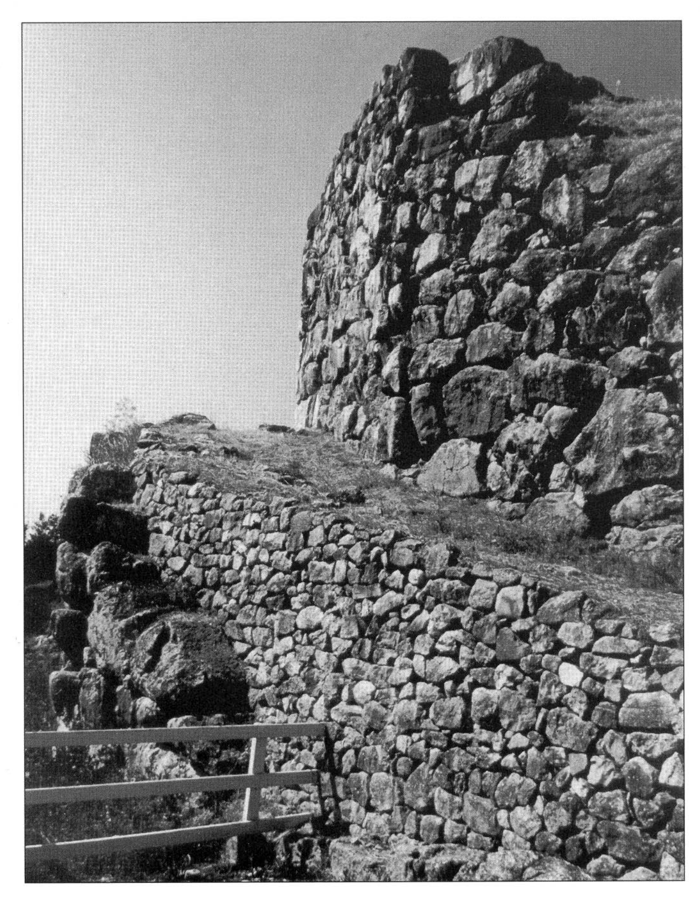
1.65m) with a corbel-vaulted roof. Six square chambers open at regular intervals along its eastern length, which are entered through openings varying from 1.5 to 1.7m wide. The chambers themselves measure 4.9 to 5.05m by 3 to 3.1m. The South Gallery is shorter (21.9 by 2.58m) and five chambers open off it. The doorways vary in width from 1.2 to 1.5m, while the chambers here measure 4.25 to 5.4m to 3.25 to 3.35m. Set within the thickness of the circuit-wall, these chambers may well have been magazines.

Gateways

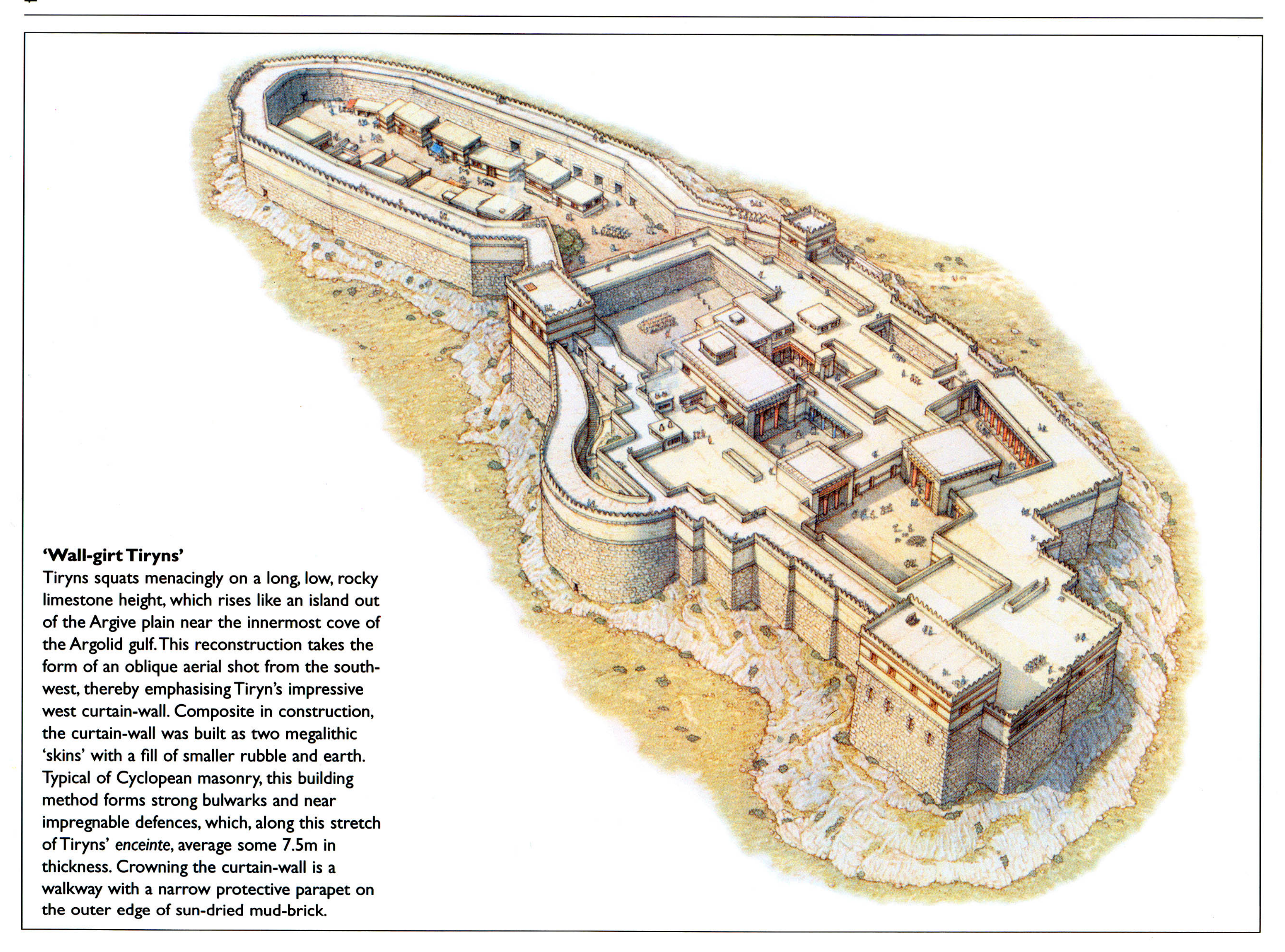
The principal entrance was in the middle of the east curtain-wall, while a postern pierced the great semicircular bastion that projects on the west flank of the Upper Citadel. In addition, there were two posterns in the *Unterburg*.

The East Gate opened in the outer wall, here 7.5m thick, and was approached via a 47m long and 4.7m wide steep ramp that was suitable for chariots. Its disposition exposed the attacker's unshielded side to the defenders and necessitated a sharp turn at the top. Beyond the gate itself, of which there is no trace but was probably double-leafed and reinforced with bronze plates, runs a long narrow passage running north and south between the inner and outer walls. Turning right the passage leads down to the *Unterburg*, while some 50m to the left stands another entrance, the middle gateway, which is almost equal in dimensions to the Lion Gate at Mycenae and built of the same material. Here the monolithic threshold has pivot-holes for the double-leafed gate that closed the entranceway, and in the rebated doorjambs are the boltholes, 15cm in diameter, allowing a wooden crossbar to be shot home into the wall. Beyond the passage widens to form a roofed corridor (or barbican), narrowing again to a point where a third entrance, the inner gateway, stood, which gave access to the palace complex.

This is the most elaborate of Mycenaean entrance systems, combining three gateways, outer, middle and inner, and two long narrow passages or 'killing boxes'. The latter, which formed a no-man's land between outer and middle

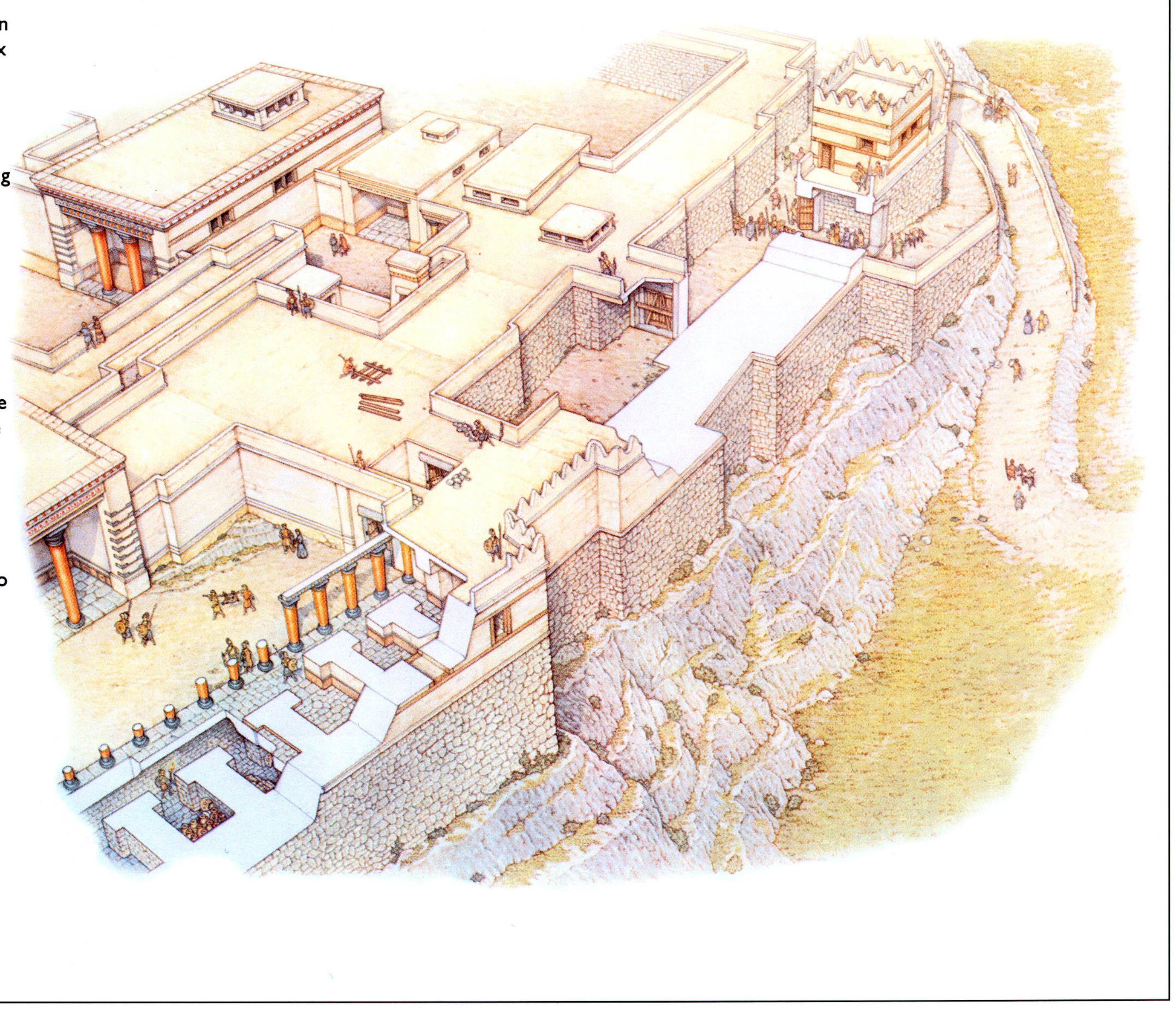


The impressive remains of the ramp leading up to the East Gate, the principal gateway of Tiryns, looking from the north-east. Some 4.7m wide, this ramp formed an approach practicable for chariots, while its disposition exposed the attacker's right, or unshielded side, to the defenders on the east curtain-wall and necessitated a sharp turn to the right at the summit. (Author's collection)



'Wall-girt Tiryns'
Tiryns squats menacingly on a long, low, rocky limestone height, which rises like an island out of the Argive plain near the innermost cove of the Argolid gulf. This reconstruction takes the form of an oblique aerial shot from the south-west, thereby emphasising Tiryn's impressive west curtain-wall. Composite in construction, the curtain-wall was built as two megalithic 'skins' with a fill of smaller rubble and earth. Typical of Cyclopean masonry, this building method forms strong bulwarks and near impregnable defences, which, along this stretch of Tiryns' *enceinte*, average some 7.5m in thickness. Crowning the curtain-wall is a walkway with a narrow protective parapet on the outer edge of sun-dried mud-brick.

East Gate, Tiryns
This cutaway reconstruction shows the gateway complex that forms the principle entranceway of Tiryns. The East Gate is the most elaborate of Mycenaean entrance systems, combining three gateways, outer, middle and inner, and two long narrow, open passages or 'killing boxes' running north and south between the inner and outer walls. Attackers could have been trapped in these confined spaces and picked off by the defenders above. With little room for movement, each one was a trap difficult to escape. Note that the disposition of the outer gateway exposed the attacker's unshielded side to the defenders and necessitated at the top of the ramp a sharp turn. Beyond the gate itself runs the first of the two 'killing boxes'.



gateways, and middle and inner gateways, recall the parallel walls that fortified earlier sites as Dimini and Kastri. Attackers could have been trapped in these confined spaces and picked off by the defenders. With little room for movement, each one was a trap difficult to escape.

The West Gate, in truth a postern and added onto the existing circuit-wall during the third building phase (Citadel III), is a splendid example of Mycenaean fortification engineering. A massive bastion (West Bastion), which forms a sickle-shaped extension of the second-phase west curtain-wall (Citadel II), fully contains and protects this entrance system. On the outside the entranceway is small and unobtrusive, 2.5m high with corbelled exterior and no trace of a door. Inside however, it quickly opens up both in height and width as it proceeds through the thickness of Cyclopean curtain-wall to a stairway than runs along the line of the circuit-wall. Opposite the postern and roughly parallel to the stairway stands the original west curtain-wall. From its parapet the defenders could have easily compromised the attackers, who, because of the curving course of the stairway, were left completely exposed to missiles hurled from above. Finally, at the top of the flight of 65 steps stands a tower, which obviously served to guard this section of the entrance system.

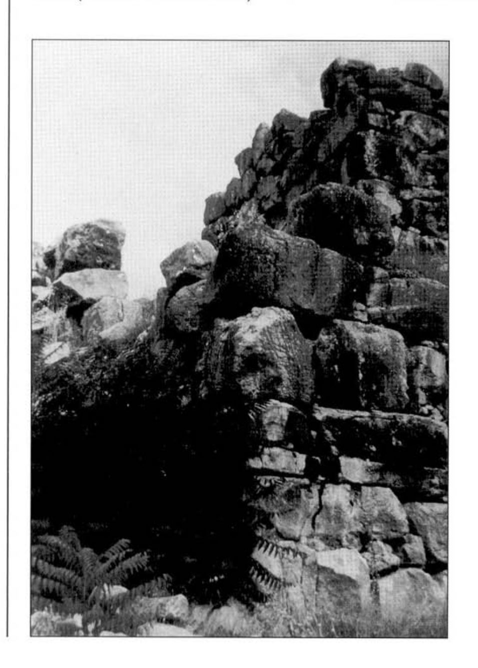
Interior

Having negotiated the three gateways that make up the principal entrance to the citadel the visitor passes through the Great Propylon, a monumental gateway to the palace complex, and reaches a forecourt. Of regular plan, this unit occupies the entire southern section of the Upper Citadel. A smaller colonnaded propylon at the north end of the forecourt takes the visitor into the core of the palace complex.

First comes a court with porticoes on three sides, which would have supported balconies at first-floor level. Here is a circular altar on the axis of the megaron, and it was certainly likely that ceremonies were held in the court. Facing south along the axis of the court stands the megaron, the principal element in the palace complex, forming a rectangle measuring externally 25 by 12.5m. Having entered by a porch, the visitor then passes through the anteroom to finally reach the large throne room (11.8 by 9.80m) dominated by its circular hearth, some 3m in diameter, enclosed by four stuccoed wooden columns. A throne sat on the right side of the room, opposite the hearth. The

BOTTOM LEFT Homer speaks of 'wall-girt Tiryns' (*Iliad* 2.559) and the Cyclopean *enceinte* is built of two kinds of local limestone, red and grey, in irregular blocks of different sizes, laid as far as possible in horizontal courses. These massive stones, the largest of which are in truth boulders weighing over 14,000kg, are partially hammer-dressed; smaller stones bonded with clay mortar fill the interstices. In this shot we are looking at the inner façade of the East Gate. (Author's collection)

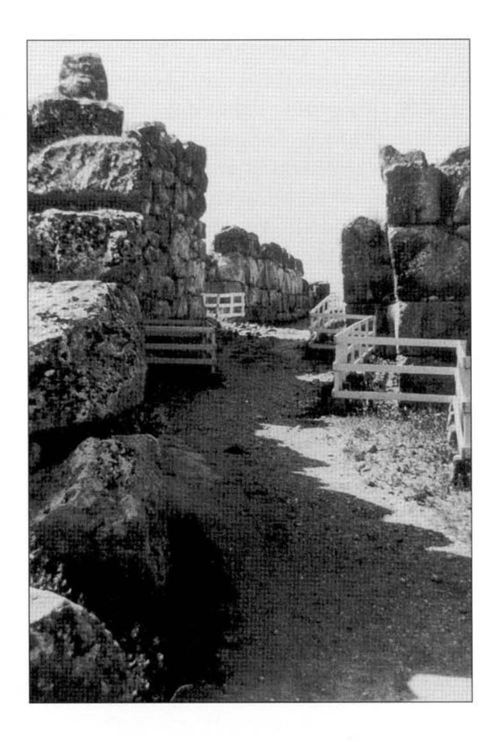
BOTTOM RIGHT The middle gateway of Tiryns, looking back towards the East Gate (right of centre) with the continuation of the passage down to the *Unterburg*, is almost equal in dimensions to the Lion Gate at Mycenae and built of the same material – conglomerate. Here the monolithic threshold has holes for the pivots of the double-leafed gate that once closed the entrance, and in the rebated doorjambs are the bolt-holes allowing a wooden crossbar to be shot home into the wall. (Author's collection)





floor was decorated with squares separated by zones of rosettes, enclosing alternately an octopus and a pair of dolphins framed by a net pattern. Three zones of rosettes surrounded the base of the throne. The walls of this room were decorated with frescoes.

A long corridor around most of the megaron connects a series of smaller apartments and also gives admittance to a second megaron and court on the east. Similar apartments to its west included a bathroom. Here the extant floor consists of a single block of grey limestone, gently tilted so that wastewater drains away. Panels, possibly of wood that had been plastered, were fixed in the drilled dowel holes around the edge of the block.

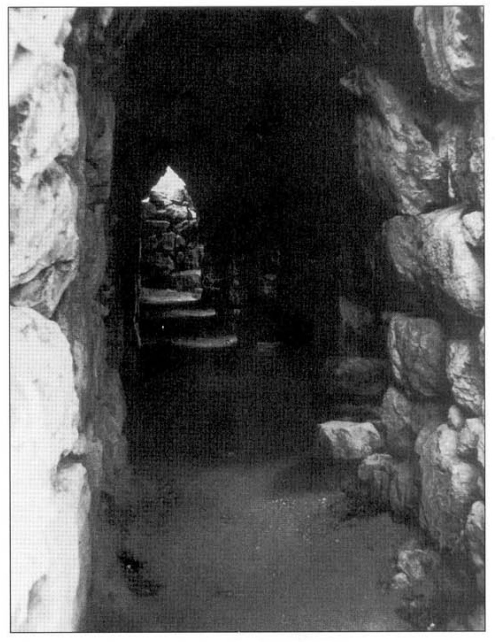


Having negotiated the East Gate (left of centre), the visitor then entered a long narrow passage running north and south between the inner and outer walls of Tiryns. Turning right (towards the camera) the passage leads down to the *Unterburg*, while some 50m to the left stands another entrance, the middle gateway, seen here in the distance. As this picture perfectly illustrates, would-be attackers could have been trapped in this confined space and picked off by the defenders positioned on the curtain-walls. (Author's collection)

The *Unterburg*

The *Unterburg* is connected to the Upper Citadel via the north extension of the passage immediately beyond the outer gateway of the East Gate. It also has two approaches of its own, the North Postern and the West Postern. The *Unterburg* is arranged on a terrace and built to a single plan. The structures within were aligned along the length of the circuit-wall and separated by alleyways orientated north to south. A central street runs south from the North Postern to link up with the passage leading to the Upper Citadel. Ten building complexes have been identified. They seem to have been residences and workshops, the latter for working metal and precious materials such as ivory. Similar uses are also attested in the galleries of the circuit-wall.

Two openings in the north-west section of the circuit-wall provide access to passages that lead diagonally through the Cyclopean curtain-wall. They continue outside, underground, sloping down to the west where there is a natural spring with its waters seeping through the rock. The openings inside the curtain-wall are some 9m apart, but they gradually converge beyond the wall. The northern passage is 28.9m long and terminates in a small, shallow reservoir hollowed out of the bedrock. The southern passage also terminates in a rock-cut basin after a length of 30.7m through the wall and out beyond it. The walls of both passages are built with Cyclopean masonry, and evidence of clay is preserved at the joints between the boulders. The roofs of the passages are corbel-vaulted. The average height in each passage is 3.5m, while the width at the base is 1.4m. Since the water supply was plentiful and in demand, two passages better fulfilled the function of supplying the needs of those seeking protection behind the fortification walls in time of siege.



The East Gallery was built into the thickness of the south-eastern corner of Tiryn's east curtain-wall. The gallery, a long narrow passage with a corbel-vaulted roof, gives access to six square chambers placed at regular intervals along its eastern length (seen right). The chambers may well have been magazines for the storage of foodstuffs. (Author's collection)

Midea

Apollodoros (*Bibliotheca* 2.4.4) associates Midea with the hero Perseus, who, as with Mycenae, was its founder. Certainly Midea's prominent position amongst

the Mycenaean centres of the Argolid has been emphasised by scholars. It is considered the third Mycenaean citadel after Mycenae and Tiryns, thanks chiefly to the rich finds, which include the Dendra Panoply from the LH IIIA cemetery in the neighbouring area of Dendra, just a kilometre to the west. It has been assumed that the acropolis of Midea and the necropolis at Dendra were connected because of the close proximity of the two sites.

Excavations at the site began in 1907 under the auspices of the German Archaeological Institute, and were continued in 1939 by the Swedish archaeologist A. W. Persson, who opened a number of trenches on the lower terraces and brought to light a few architectural remains on the summit of the hill. These he attributed to a palace. In 1963 the current Greek–Swedish collaboration began in Midea with a small trial excavation near the East Gate. Excavations within the *enceinte* were resumed in 1983 and have continued systematically since then under the joint direction of K. Demakopoulou (Greek Archaeological Service) and, until 1999, P. Åström (Swedish Institute at Athens). Since 2000 A-L. Schallin has directed the Swedish side of the project.

Topography

Although not listed by Homer in the Catalogue of Ships, Strabo describes Midea as near Tiryns (8.6.11). Pausanias is a little more precise, and says that, returning from Tiryns on the road leading from Argos to Epidauros, 'you will reach Midea on the left' (2.25.9). Dominating the eastern edge of the Argive plain, the citadel sits atop a conical hill (270m) and is located about halfway between Mycenae and Tiryns.

The *enceinte*

The circuit-wall encloses an area of about 24,000m^2 (*c.* 2.4ha) protecting the upper citadel and the lower terraces. Covering a circuit over a kilometre long, it follows the natural contours of the rock in sweeping curves. However, the south-west slope is precipitous enough to have remained unfortified. In length it is third only to Gla and Eutresis.

The construction of the circuit-wall is of medium-sized (not Cyclopean) flat blocks, placed roughly in courses but having a polygonal effect due to their irregular shapes. An interesting feature of this circuit-wall is that these blocks form the entire thickness of the wall; there is no trace of the rubble and earth fill found in Cyclopean walls. This is also true of the circuit-wall at Gla and, along with the use at both sites of medium-sized flat blocks, suggests a second type of Mycenaean fortification construction. This may be partly due to the great length of the circuits at both sites, and to the building stone available locally.

Gateways

The two gateways of the citadel are opposite to each other on the east and west sides of the fortification.

The East Gate opens inwards, from a width of 1.55m at its outer entrance to 2.25m in the interior. This is probably a characteristic feature of Mycenaean gateways. The pavement consists of thick, irregular stone slabs over a bed of earth and rubble fill. The approach leading up to the entranceway cannot be traced, but it was probably a steep ramp leading up from the north-west. The enemy who ventured along it would thus leave his right flank exposed to the defenders on the curtain-wall. Just inside the gateway, facing the entranceway, the bedrock rises vertically, obliging the visitor to turn at right angles and proceed southward to the top of the citadel. A corridor some 4.5m wide is thus formed similar to the one that forms part of the entrance system at Tiryns. The defenders of the gateway could stand at the top of this eminence and rain down missiles on anyone attempting to force an entrance.

The West Gate lies between the end of the south-west part of the circuit-wall, which at this point was extended to form a bastion projecting

5.25m from the wall, and a retaining wall covering a vertical cliff. The opening between them is 4.56m on the outside, and narrows down to 4.1m where the bastion ends and the thickening of the wall begins. The location of this gateway was carefully chosen for the natural advantages it offered for the protection of the citadel as a whole. The ramp used as an approach was cut out of the bedrock. It extends 70m southward and is limited to a width of 3m by a precipice on its west side and the wall of the citadel rock on the east.

Interior

The summit consists of the bare citadel rock. At about the centre of the acropolis, which also happens to be its highest point, a 50m area was levelled presumably for the palace. In outline it is L-shaped and reminiscent of the 'palace' at Gla. The longer section runs north to south and a wing on the south side runs east to west. A large amount of coarse ware for domestic use and fine decorated pottery was found, all of which is dated to the middle years of the LH IIIB period. Other finds include jewellery, sealstones, fresco fragments, terracotta roof tiles and numerous clay figurines, all similar to that from Mycenae and Tiryns.

In the area inside the West Gate recent excavations (1996–2000) have brought to light a complex of rooms built on successive terraces parallel to the fortification wall. The evidence to date suggests that it was a large building complex with two wings separated by a central corridor with a built drain running through it. The best-preserved rooms, which were basement rooms, are those built against the circuit-wall. The finds, such as stirrup jars; millstones; whetstones; stone mortars; stone, bronze and bone tools; raw materials such as ochre, fluorite and mother-of-pearl; and a steatite mould for casting beads, show that most of these rooms were magazines and workshops, some of the latter for the manufacture of jewellery. With regards to storage, of special interest are four clay sealings with Linear B inscriptions and three stirrup jars also bearing Linear B inscriptions, which show that Midea was an administrative centre like Mycenae and Tiryns.

Gla

Gla attracted the interests of travellers and antiquarians from as early as the beginning of the 19th century. Visitors to the site included E. Dodwell (1805), W. M. Leake (1806), and L. Ross (1834). All noted it as a fortified hill or island (depending on the season at which they saw it). Schliemann made an excursion on horseback to here from nearby Orchomenos (1881), but did not consider it worth investigating.

F. Noack was the first scholar to survey the site (May 1893), and drew plans of the rock, the *enceinte* and the visible remains. A month later A. de Ridder, who was to excavate the buildings within the *enceinte* and study the fortifications, came to the site. He dated the entire site to the late Mycenaean period. The following year, Noack completed his survey and produced a topographical plan of the hill and the structures on it. Thereafter, the Greek Archaeological Service conducted extensive excavations, first by I. Threpsiades (1955–61), and more recently by S. E. Iakovidis (1981–91).

A citadel without a name

The modern inhabitants of the area know the citadel as *Paliókastro* (literally 'ancient fortress'), while in archaeological literature it appears as Gla, the Albanian equivalent of its Greek name. Noack (1894: 463–74) equated Gla with Homer's 'Arne, rich in grapes' (*Iliad* 2.507), whereas an earlier visitor to the site, K. Bursian (1862), had previously identified it with Kopai (*Iliad* 2.502), the town from which the name lake Kopaïs derived in antiquity. Hope Simpson and Lazenby (1970: 31), on the other hand, argue that if Gla was a citadel rather than a settlement, the epithet 'rich in grapes' would be somewhat



The Kopaïc basin, looking south-west from the South Gate of Gla towards Mount Helikon, the legendary home of the Nine Muses. Throughout the centuries, the basin was annually flooded and transformed into a marsh or lake, depending on the time of the year, and on these occasions the citadel rock became an island. While the Mycenaean drainage system was functioning, however, Gla was surrounded by a fertile plain and could be approached by dry land, as it can today, now that the lake has been drained again. (Author's collection)

inappropriate. Although attractive, the case for linking Gla with Homer's Kopai, which means 'oars' and thus possibly reflects a time when the normal method of transport to the place was by boat, no longer stands. Kopai has almost certainly been located at the modern village of Topolia near Levadia. Sadly, like Midea, Gla appears to have been omitted from the Catalogue of Ships.

Topography

Located in the north-east corner of the Kopaïc basin, Gla squats upon a low, rocky eminence that rises sharply from 9.5 to 38m above the surrounding plain. The hill is pear-shaped, almost 900m long from east to west and a maximum of 575m across from north to south. The total surface area covered is some 200,000m^2 (*c.* 20ha), and has a comparatively even summit, though the sides are very steep, especially on the north. Throughout the centuries, the Kopaïs was annually flooded and transformed into a swamp or lake, depending on the time of year, and on these occasions the citadel rock became an island. This condition arose when the Mycenaean drainage system of Cyclopean-walled dykes and canals was neglected and the sinkholes (*katavóthroi*) became choked up by refuse in antiquity (Strabo 9.2.40, Pausanias 9.38.7). While the drainage system was functioning, however, the rock was surrounded by a fertile plain and could be approached by dry land.

The *enceinte*

Enclosing the entire summit-plateau – an area ten times greater than at Tiryns and Athens, and seven times greater than Mycenae – the *enceinte* circles the hill in a continuous unbroken circuit along the brow of the rock, and is some 2.8km in length. Built as a single unit, the preserved height ranges between 3 and 5m. It exhibits a uniform thickness of 5.4 to 5.8m, but has no galleries or drains. Uniquely, at intervals of 6 to 12m, the outer face of the circuit-wall is broken by vertical offsets that project 10 to 60cm, giving the wall a serrated appearance. This configuration of the outer face is duplicated on the inner, where the row of offsets is repeated in reverse. This was devised as a means of breaking up the curved line of the circuit-wall into short, straight sections. According to Iakovidis (2001: 12) the local limestone is veined in a manner that when quarried it breaks into regular blocks unsuitable for curved surfaces.

Like Midea, the circuit-wall was thus constructed using medium-sized slab-like blocks, roughly dressed at their sides and corners, with small stone wedges between. The bedrock was first dressed, and an irregular layer of flat stones was then laid on top so as to create a more or less level surface. On top of this the flat blocks were laid in almost horizontal courses, which make up the whole thickness of the wall rather than rubble and earth fill found in Cyclopean walls.

Gateways

In total, four gateways (South Gate, West Gate, North Gate, South-East Gate) pierce the circuit-wall. All were built with carefully selected and assembled blocks – long square blocks (almost ashlar) in fairly horizontal courses. A Mycenaean road encircles the site, which ascends to all four gateways via ramps made of packed earth and small stones, except that leading up to the South Gate, which has a stone-paved ramp 100m long and 6m wide.

This gateway is the largest and strongest, protected by two massive bastions built at an angle to the circuit-wall and projecting beyond and behind it. The diagonal position of the entranceway in relation to the line of the circuit-wall is because the slope of the ground requires it. The outer projections are solid (packed fill), while the interior ones are chambered and probably served as two guardrooms. The bastions are built of rectangular blocks in courses, and larger headers and stretchers strengthen the corners. The blocks are not placed tightly together, but the interstices are filled with smaller stones (as at Tiryns).

The west bastion projects 5.9m forward from the threshold, and the east 11.64m, thus the difference in lengths offered the opportunity of enfilading attackers both flank and rear. Moreover, the entranceway has an approach requiring a turn, and whether the enemy approached from the east or west side, the east bastion, projecting a little further than the west bastion, was always to the right of the attacker. A 3.5m-wide ramp led up to the summit of the east bastion and the entire gateway complex. Evidence of brick hardened by fire indicates that the superstructure was of sun-dried mud-brick reinforced by a timber framework. Further burnt remains, namely charcoal, white ash, pieces of bronze and broken nails, indicate that the double-leafed gate was made of wood reinforced with bronze plates. As there is no evidence for stone-built or monolithic lintel and doorjambs (as at Mycenae and Tiryns), the frame was probably wooden also.

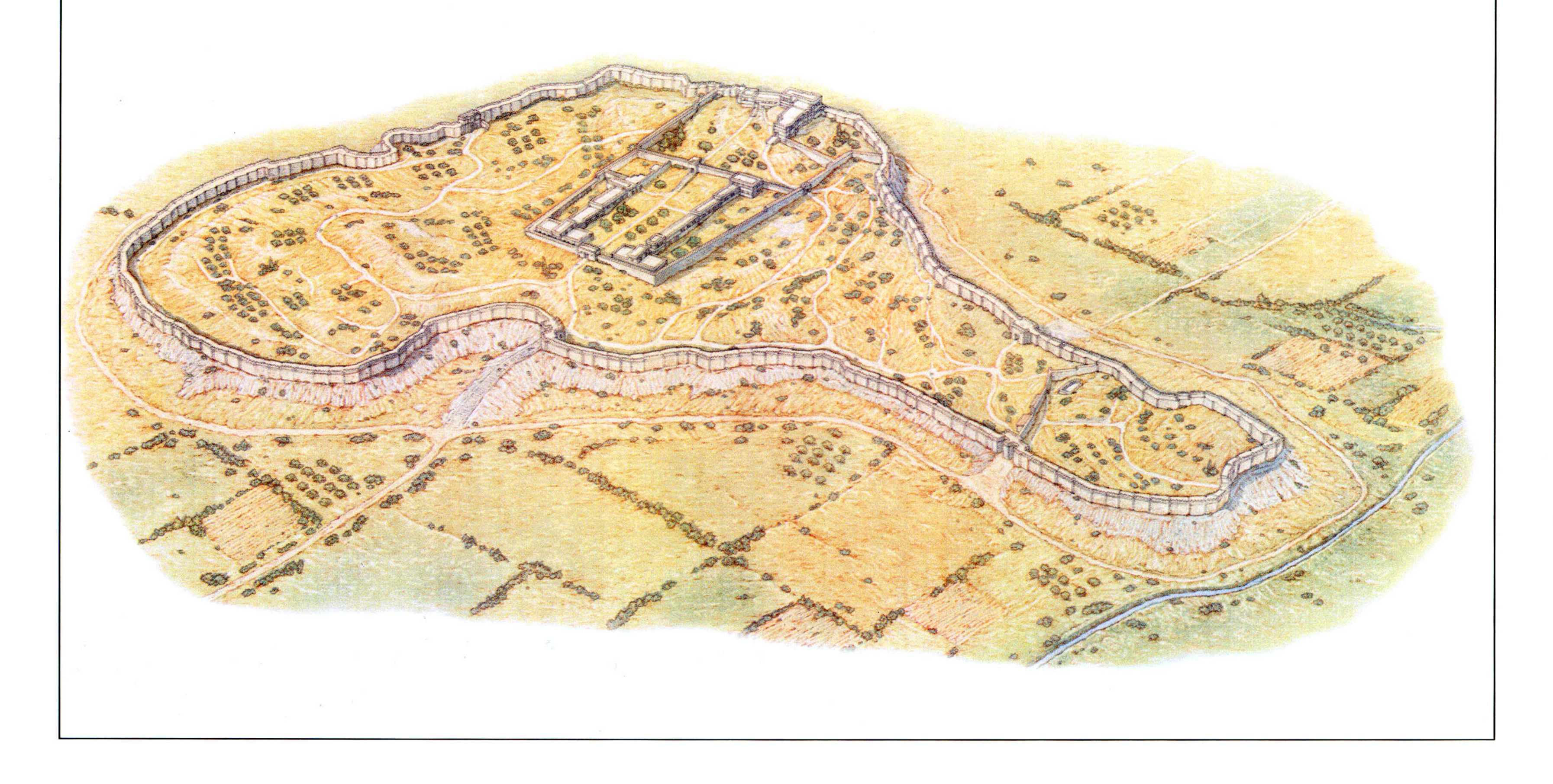
The West Gate is approached by several steps cut out of the rock or formed by two blocks alongside one another, which lead up the short, steep slope on this side of the hill. The steps end before the entranceway (5.25m wide). This is protected on either side by a projecting bastion, some 5.6m wide, thrown out from the regular line of the circuit-wall, which forms an obtuse angle with the north bastion and an acute angle with the south one. The entranceway then was inserted at a diagonal line through the wall, and the bastions were added onto the thickness of the wall itself. The bastions are built of flat-cut blocks, and larger headers and stretchers strengthen the corners. Small stones are wedged in between the corners to fill the interstices.

The North Gate is approached from the north-west along a gently sloping pathway coming from the direction of Orchomenos and leading into the citadel. The only indication of an opening along this rather straight section of the circuit-wall is the slight projection of the bastions on either side of the entranceway (5.5m wide). The bastions project 0.6 and 0.7m respectively from the outer face of the circuit-wall. The north-west bastion is 5.9m wide, the north-east one 6.28m. The large size and construction of the bastions here, similar to those of the West Gate, provide the defences for this gateway.

The South-East Gate differs from the others in that it has a double entrance, each with its own guardroom placed on the right as you enter. There is a very slight projection of the bastions, whose extensions line the entranceways on either side and include the guardrooms within their thickness. The east bastion

Gla

A reconstruction panorama, looking from the south-east, illustrating Gla. Its fortifications circle the low, rocky eminence in a continuous unbroken circuit along the brow of the summit-plateau. Within lies a large enclosure divided in two by a cross-wall, the north section housing the 'palace', and the south section the 'agora'. Four gateways, located at roughly the cardinal points of the compass, pierce the *enceinte*. At the foot of the rock is the Mycenaean road that circumnavigates the citadel and beyond lies arable land. Throughout the centuries, the Kopaïs was annually flooded and transformed into a swamp or lake, depending on the time of year, and on these occasions the citadel-rock became an island. While the Mycenaean drainage-system of dykes and canals was functioning, however, Gla was surrounded by a fertile plain and could be approached by dry land.



is 3.9m wide, the west one 4.9m. As a wall running roughly north from the South-East Gate divides the citadel into two unequal parts, this gateway serves the walled-off 'lower town' area with its eastern opening and the main citadel with its western one.

Interior

The western section covers nine-tenths of the summit plateau, and contains a centrally placed large enclosure divided into two by a cross-wall, the north section housing the 'palace' and the south section the 'agora'. Abutting the circuit-wall, the perimeter wall of this enclosure is preserved for its entire length and encompasses an area of about 66,000m^2 (*c.* 6.6ha). The main entrance to the enclosure was situated in the middle of the south perimeter wall, opposite the South Gate.

The palace is an L-shaped building, consisting of two long narrow wings, one orientated east–west (North Wing), and the other north–south (East Wing). The whole complex perches on an artificial Cyclopean terrace, with the north wing incorporated in the circuit-wall. Each wing is made up of multifarious and abnormally small apartments, two to three rooms each, connected by corridors. There is an entrance and main corridor to each wing. However, there is no throne, hearth, or bath: the typical attributes of a Mycenaean palace. The two wings are a mirror image of each other, and Iakovidis (2001: 40) argues that this structure was the residence of two high administrative officials of equal rank.

The agora contains two long, narrow, parallel building-complexes running north south, with two oblong rectangular buildings to the south that are identical in size and plan: a central north–south passage divides each building into two equal parts, which are subdivided in two large rooms. The west building complex is a continuous long structure, with three narrow pillared halls (south) and a row of small apartments (north). The east building complex exhibits a narrower, simpler plan. De Ridder (1894: 297–301) postulated that the 'agora' could have been the barracks for the garrison while Iakovidis (2001: 83), on the other hand, argues for magazines and workshops.

Function

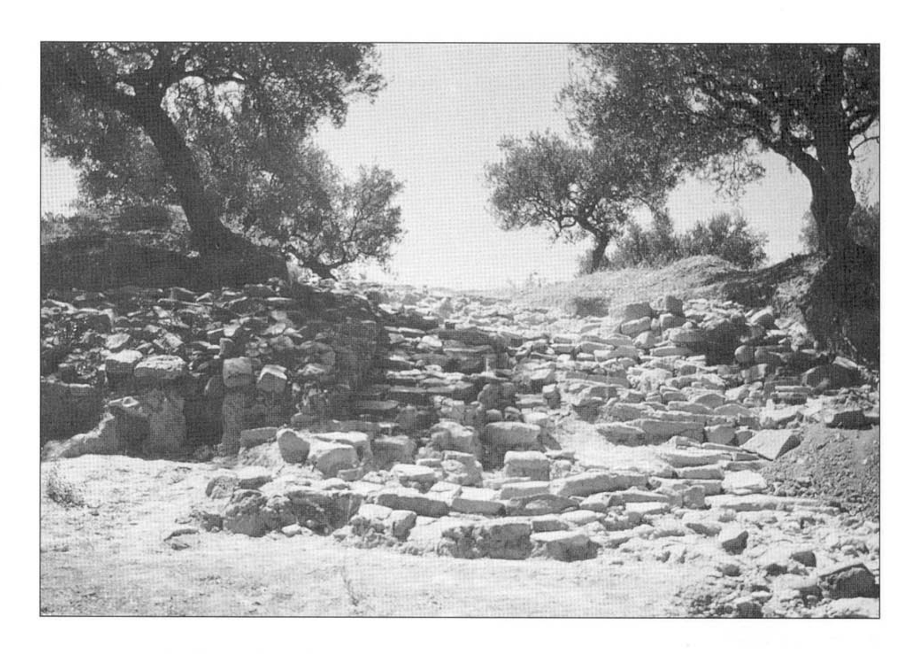
Gla is too bare, rocky and waterless to be a suitable location for a 'great Mycenaean city' (Threpsiades 1962: 47–48). On the other hand, the remains unearthed at Gla strongly suggest that the site was a sort of military stronghold. The 'palace' is made up of a number of unusually small apartments, and the 'agora' could easily be interpreted as military quarters, the warriors perhaps occupying the row of small apartments in the west building complex, with stables (i.e. chariots) in the east building complex. Besides, the rectangularity of the ground plan is rather unlike what we should have expected in a Mycenaean urban settlement, and conjures up a picture of something much more like a Roman fort. Moreover, the distinct lack of pottery shards also seems inconsistent with Gla being an urban settlement. In fact, the most likely explanation for the surrounding of such a barren site with a circuit-wall some 2.8km long is surely a military one.

Gla is best seen as the headquarters for the maintenance of all the forts in the north-west bay of the Kopaïs and the look-out posts on Mount Ptoön to the east. Nearby stands Orchomenos, one of the major Mycenaean centres whose heyday was probably the LH IIIB period, as was that of Gla. It can be reasoned, therefore, that during this period Orchomenos, the wealth of which became proverbial (*Iliad* 9.381), controlled the citadel of Gla and the outposts and drainage system associated with it.

Pylos

Strabo best sums up the controversies about the location of Nestor's Pylos when he says 'there is a Pylos in front of Pylos and indeed there is still another Pylos'

Pylos as a whole was not fortified during the LH IIIB period, although it appears to been in an earlier LH IIIA phase. The flat-topped ridge, upon which the palace complex sits, rises abruptly on all sides in a steep, almost precipitous bank. It is only towards the easternmost angle that a relatively narrow terrace descends somewhat lower. In this shot we see the remains of what once was the East Gate, either side of which are traces of the corresponding circuit-wall. (Author's collection)



(8.3.7). Strabo's preferred candidate for Nestor's capital was the Triphylian Pylos, although it was well inland (8.3.14), whereas references by Homer (*Odyssey* 3.4–5, 386–87, 423–24, 15.215–16) imply a site close to the sea. But the discovery of the magnificent Mycenaean palace on the low but abrupt hill of Epano Englianós, and the decipherment of the Linear B tablets, in which the name PU-RO frequently occurs, have at least made it virtually certain that this was the original 'sandy Pylos' of Homeric fame.

The palace on Epano Englianós ranks among the best preserved of Bronze Age monuments in Greece. Beginning in 1939, excavations by C. W. Blegen revealed the complete floor plan of a large palace complex with decorated walls and floors, Linear B tablets and sealings, pottery and a variety of artefacts. In the course of Blegen's campaigns at Pylos (1939, 1952–69), Piet de Jong, a visiting architect, plotted walls as they appeared during excavation.

A citadel without walls

Strictly speaking Pylos is a palace not a citadel – Mycenae, Tiryns and Athens are both palaces and citadels, whereas Gla is a citadel but arguably not a palace. The hilltop site was not fortified during the LH IIIB period, although it appears to have been in an earlier LH IIIA phase. The puzzling question, therefore, is why was the Mycenaean palace not protected, as was the norm, by Cyclopean walls? The gentle north-eastern approach was certainly fortified by a gateway and curtain-walls before the period of the last palace. The large number of administrative records surviving on the clay tablets (about 1,200 fragments) demonstrates Pylos was a centre of government in the LH IIIB period, comparable to Mycenae or Tiryns. It is certainly hard to believe that in the period when the walls of Mycenae, Tiryns and Athens were being strengthened and the area within them enlarged, a new palace complex in the south-western Peloponnese was built without renewing or replacing the fortifications that protected its predecessor.

One possible solution to this conundrum is to believe that Pylos was the unchallenged power in Messenia, with no powerful neighbours to threaten it, as was probably the case with Mycenae and Tiryns, and Thebes and Orchomenos). With regards to possible external threats it probably relied upon its seapower for security. Over 600 oarsmen are listed on two Linear B tablets (An 1, An 610), while another (An 724) deals with those who are missing from the muster. All in all these tablets suggest preparation for a naval operation. Another group of texts

contains lists of men who are assigned guard duty along the coast. The heading of one tablet (An 657) reads: 'Thus the watchers are guarding the coast'. Alternatively, it has been suggested that the Mycenaean economies were overstrained by the construction of elaborate fortifications, and their absence, as at Pylos, may reflect prudence or recognition of limits to their resources on the part of local rulers.

Topography

The palace complex is set, within sight of the bay of Navaríno, in a broken but fertile landscape on a ridge between two ravines. The flat-topped ridge (150m) has a maximum length of about 170m from south-west to north-east and a width not exceeding 90m. It rises abruptly on all sides in a steep, almost precipitous bank, some 4 to 7m high. It is only towards the north-easternmost angle that a relatively narrow terrace descends somewhat lower. The palace itself occupies only a little more than the south-western half of the hill. Its position, however, commands an extensive view. From here a great part of the coast to the west is clearly visible as well as the hinterland rising to the mountain barrier of Aigaleon to the east.

The palace

In its last and most splendid phase, dated to the LH IIIB period, the palace complex consisted of two-storeyed half-timbered buildings in three main blocks. The exterior walls were faced in squared slabs of soft limestone (poros) bonded with clay, the inner walls were of rubble coated in mud plaster with a lime plaster surface decorated with frescoes, and had wooden wainscots. The upper storey had mud-brick walls between the vertical timbers. Columns, door-casings, wainscoting, ceiling and roofs were all constructed mainly of wood, and this abundance of combustible material accounts for the devastating effect of the fire that destroyed the palace complex.

The Main Building contained the megaron, propylon, palace archives, magazines and private chambers. Its most conspicuous feature was the megaron, two storeys high, the idiosyncratic Mycenaean architectural unit was composed of a porch with two wooden columns, an anteroom and the rectangular throne room (12.9 by 11.2m) decorated in bright frescoes. One of the preserved frescoes depicts a couchant lion and a couchant griffin, while another shows a male figure seated on a rock and playing a lyre. The main feature of the throne room was its circular fixed hearth. Fashioned of richly decorated stuccoed clay, even today it forms an impressive 4m diameter circle raised some 20cm above the floor. Dominating the throne room, this must have been symbolic and not simply a source of heat. The floor was divided into patterned squares, all abstract in design except for one with an image of an octopus. This is directly in front of a depression in the floor against the right-hand wall where a throne stood. Beside it in the floor is a hollow from which a narrow V-shaped channel leads to a second slightly lower hollow some 1.8m away. These may have been used in some libation ceremony performed from the throne.



The highlight of any visit to the Palace of Nestor (Pylos) must be the throne room of the megaron. In the centre of the throne room is a great ceremonial hearth, made of clay coated with stucco. The latter was lavishly adorned with painted patterns, such as symbolic flames (some of which are still visible) and spirals. The hearth itself was framed by four stuccoed wooden columns, which stood on stone bases – two of which are visible here – and supported a surrounding balcony and a high clerestory. The throne once stood to the right, facing the hearth. (Author's collection)



The bathroom at the Palace of Nestor, the only one of its kind yet found in a Mycenaean palace with its equipment still fairly well preserved. Here we see the terracotta *larnax*, or tub, decorated with painted patterns, set into a stucco-coated base made of clay. The *larnax* is of the type that has a slightly pinched-in waist. The bather presumably sat in it while an attendant poured water over him or her. A convenient step of clay, coated with stucco, made it easy to step from the floor into the bath. (Author's collection)

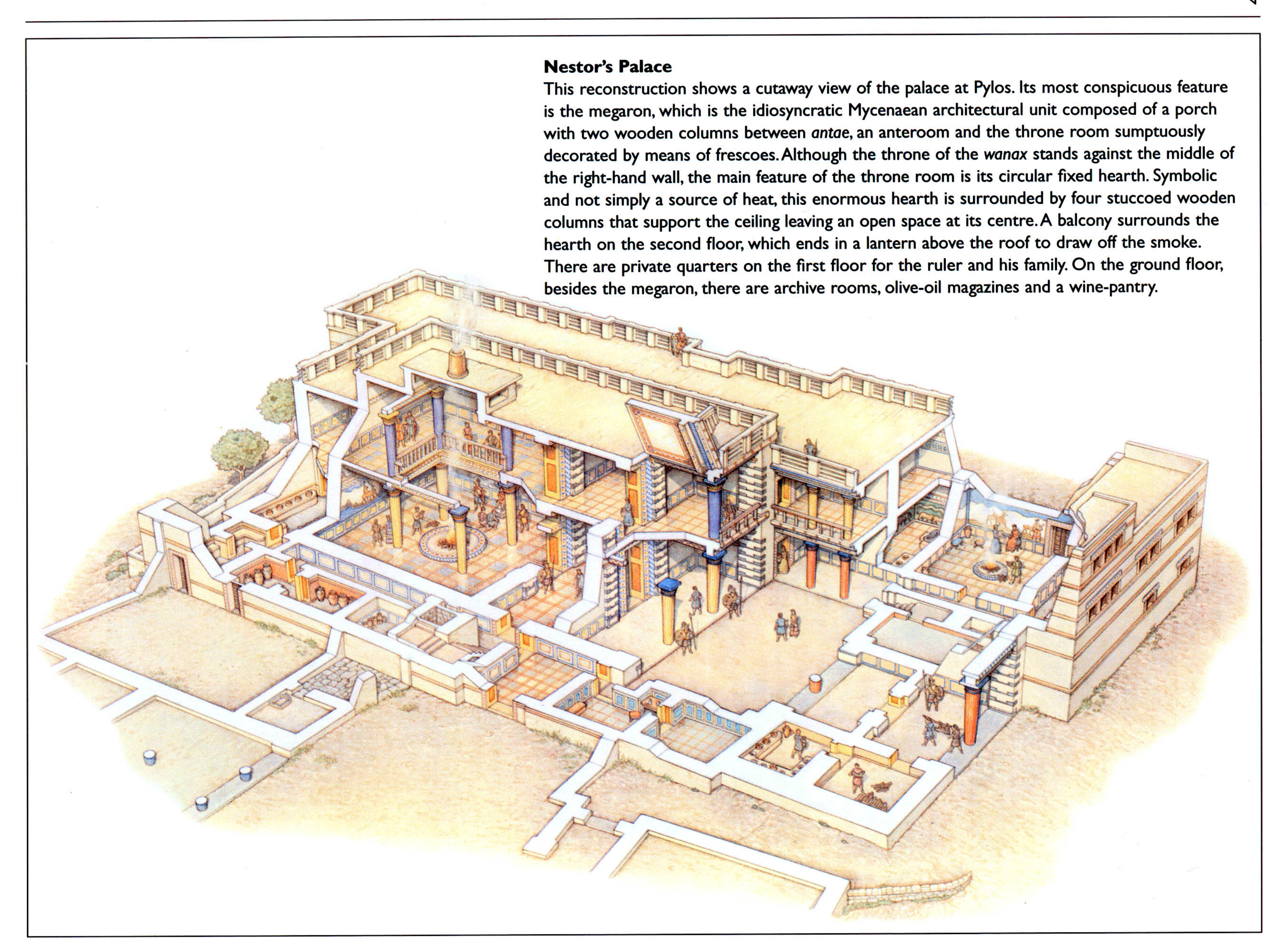
The hearth was surrounded by four stuccoed wooden columns, which held up the ceiling leaving an open space at its centre. A balcony surrounded the hearth on the second floor, which ended in a lantern above the roof to draw off the smoke. Presumably there were private quarters on the first floor for the ruler and his family. On the ground floor, besides the megaron, there were archive rooms, olive-oil magazines and a pantry where hundreds of wine cups (*kylikes*) were discovered. There is also a smaller megaron and bathroom with its fixed terracotta tub (*larnax*) still *in situ*, which probably belonged to the ruler's consort.

The South-West Building and North-East Building housed workshops, magazines and private chambers. The extensive magazines have indicated to some that the palace was playing an active economic role, mainly that of a redistributor of agricultural products (Renfrew 1972: 296), and a large settlement, covering some 200,000m^2 (*c.* 20ha), has been located around the palace hill but has not yet been fully explored. The functions of the various workshops have been identified from fragments found in them and tablet lists. They included a chariot repair shop and an armoury. Further to the north is a separate building, the Wine Magazine, in which a large room contains some 35 large storage jars (*pithoi*) still *in situ*. Clay sealings were found marked in Linear B with the ideogram interpreted as 'wine'. The impressions had been stamped on lumps of clay wrapped around cords that tied on the lids or stoppers of the wineskins or other containers that were brought here. In this way the senders had certified the kind or vintage or source of each skin or jar.

Other citadels

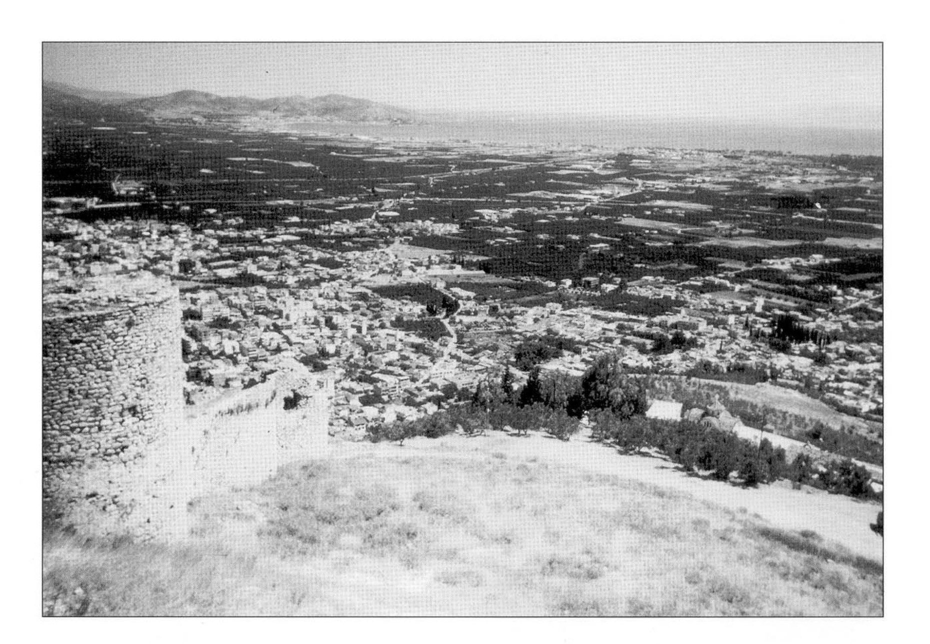
Argos (Argolid)

The two heights in Argos, which lies some 7km inland at the head of the Argolid gulf, are the lofty acropolis of Larissa (literally 'citadel'), and a lower rounded hill called Aspis (literally 'round shield'). The Larissa (276m) is an insulated conical rocky hill and one of the strongest fortresses in Greece, hence its long and continuous history of occupation. The summit of the Aspis (100m) is crowned with the remains of a Middle Helladic *enceinte* running about 150m and approximates half the circumference of the circuit. Another Cyclopean wall with a much larger circumference is evident in the north-east section of the summit. Its thickness is 2.6m. The method of construction used here is the



Nestor's Palace

This reconstruction shows a cutaway view of the palace at Pylos. Its most conspicuous feature is the megaron, which is the idiosyncratic Mycenaean architectural unit composed of a porch with two wooden columns between *antae*, an anteroom and the throne room sumptuously decorated by means of frescoes. Although the throne of the *wanax* stands against the middle of the right-hand wall, the main feature of the throne room is its circular fixed hearth. Symbolic and not simply a source of heat, this enormous hearth is surrounded by four stuccoed wooden columns that support the ceiling leaving an open space at its centre. A balcony surrounds the hearth on the second floor, which ends in a lantern above the roof to draw off the smoke. There are private quarters on the first floor for the ruler and his family. On the ground floor, besides the megaron, there are archive rooms, olive-oil magazines and a wine-pantry.



The Larissa of Argos, one of the strongest fortresses in Greece, has a long and continuous history of occupation. Sections of antique masonry can be traced in the medieval *kastro*, which was built largely on the old foundations by the Byzantines and Franks, and enlarged by the Venetians and Ottoman Turks. Archaeology has revealed that the medieval inner keep incorporates traces of a Cyclopean wall, which once protected the Mycenaean citadel, and Euripides refers to Argos as 'the city built by the Cyclopes' (*Herakles* 15). Looking south-east towards Nauplion from the summit of the Larissa, here we see part of the medieval fortifications, with the modern agricultural town of Argos immediately below. (Author's collection)

same as that of the smaller wall, though the later blocks are much larger. Along its internal face domestic structures were built up against it.

It may be that the early settlement fortified by the circular wall was followed by a Mycenaean one that was not sufficiently protected by its fortifications, so the citadel was moved up to the Larissa. Unfortunately later fortifications here, dominated by the imposing Frankish castle, have obscured the earlier remains.

Asine (Argolid)

Homer notes Asine's location in the Catalogue of Ships, unusual for Mycenaean sites, as 'lying down the deep gulf' (*Iliad* 2.560), that is, the Hermionic gulf some 8km south-east of Návplio. The acropolis (51m) overlooks an excellent deep-water harbour with wide beaches, suitable for the drawing up of ancient ships, and sheltering islands.

The citadel sits on a triangular rocky hill, which is steep and naturally fortified on the west side, excepting a few narrow ravines. On the east, it slopes gently towards the sea (to the south-east) and sand dunes (to the north-east), and is protected by the later Hellenistic and Venetian fortifications. The principal entrance into the citadel is on the north-east while a triangular, terraced area on the north-west and lower down forms the so-called Lower Town, where the remains of a large Mycenaean building complex are still visible. Of the scanty remains of the Mycenaean circuit-wall of Cyclopean construction, the best preserved is the section running south-east to north-west and on the seaward side.

Athens (Attica)

In mythology we hear of the early kings of Athens who dwelt on the Acropolis, kings such as Erechtheus in whose palace the goddess Athena was a frequent visitor (*Iliad* 2.546–49, *Odyssey* 7.78–81), or Theseus of the many exploits, the most celebrated of which was his slaying of the Minotaur (Apollodoros *Epitome* 1.7–9, Plutarch *Theseus* 15–19).

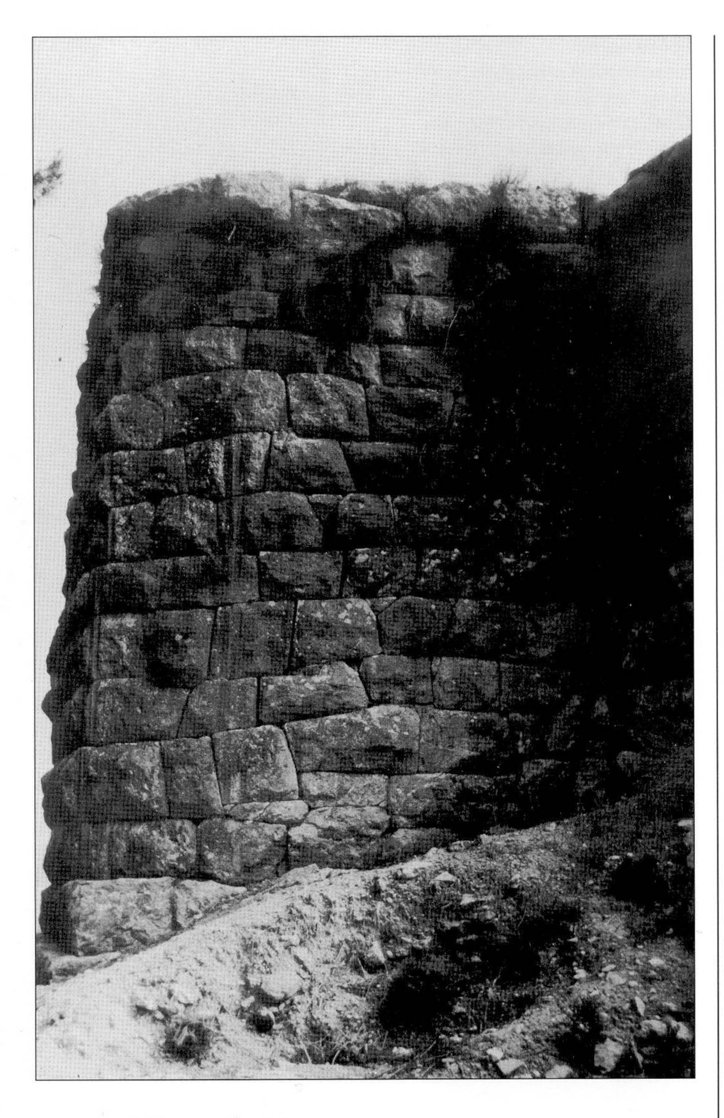
The Acropolis is a flat-topped rock (156m) rising from the centre of an enclosed plain about 10km from the sea. Although the Acropolis owes its widespread fame to the 5th-century BC buildings now visible, its history goes back at least to the early Mycenaean period, when it was already the centre of a small settlement nestled around its base. The level summit above was the site of a palace complex, which reached its zenith in the LH IIIB period when a Cyclopean circuit-wall was erected along the edge of the rock. Near the south-east corner of the south wing

of the Propylaia a section of curtain-wall is still visible. Preserved in a continuous line – the outer and inner faces are complete – the limestone blocks are large and massive. It is some 6m thick.

The south-west corner of the Acropolis forms a natural bulwark at a point where the rock slopes down to form a convenient approach. The natural advantages of this area were recognised by the Mycenaean architects and incorporated in the building of a projecting bastion to protect the approach and principal entranceway, which is now covered by the Nike temple. However, excavations have shown that this bastion was aligned east to west. The construction of the faces consists of larger and smaller unworked limestone blocks with a fill of small stones and earth. The blocks were placed directly on the bedrock, which was levelled and dressed to receive them. The bastion itself is considered as typical Mycenaean in form with the formation of a long approach route along the curtain-wall, which also could be defended from the projecting bastion. A left turn was then required to enter the citadel, thereby hindering the enemy further in his attempt to reach the entranceway itself.

For greater security, a second fortification wall or outwork protected the bastion and the whole western part of the Acropolis. This was erected at the foot of the rock, enclosing the west side and a little of the adjoining sections of the north and south slopes. This outwork also enclosed two sources of potable water.

In the course of fortifying the Acropolis the Mycenaeans discovered a natural spring on the north slope below where the Erechtheion now stands. Deep within a cave an interior rock-cut stairway of seven flights was constructed so that the spring could be reached from the Acropolis above for supplies of fresh water. A little to the west of this secret passage stood the North Postern, the second entranceway to the citadel.



Asine is mentioned by Homer (*Iliad* 2.560) as one of the places subject to Diomedes, the king of Argos and one of the most famous of the heroes who fought at Troy. The site includes the acropolis, built upon a triangular rocky hill hard by the sea, the surrounding area and Mount Barbouna to the west. The Swedish excavations have brought to light a Mycenaean settlement (Lower Town) with a corresponding necropolis on Mount Barbouna. The extant fortification walls of the acropolis, seen here, include the large projecting Hellenistic tower (*c.* 300 BC), named after Crown Prince (later King) Gustaf Adolf, who came here in 1920 on a private tour of Greece and was the initiator of the Asine excavations. (Author's collection)

Aulis (Boiotia)

Known to us from mythology as the gathering place of the Achaian fleet prior to its departure for Troy, Aulis is a coastal site overlooking two bays some 5km south of the Euripus strait. Here Iphigeneia, the daughter of Agamemnon, was fated to be sacrificed for the safe voyage of the fleet, a theme developed by Euripides in his tragedy *Iphigeneia at Aulis*. Trial excavations have revealed sections of a circuit-wall built of very large blocks along the western slopes of the rocky promontory, known locally as Nisí, which divides the bay of Aulis (*Megálo Váthy*) on the south from the smaller bay (*Mikró Váthy*) on the north. The walls date to the LH III period, and thus were part of the Mycenaean fortifications of Homer's 'rocky Aulis' (*Iliad* 2.496).

Eutresis (Boiotia)

Eutresis is situated in southern Boiotia and lies on a low, flat-topped hill at the northern end of the plain of Leuktra not far from the Corinthian gulf. Homer (*Iliad* 2.506) and Strabo, who calls it a 'small village' (9.2.28), both refer to it. The



The remains of a pillbox, built by Italian soldiers during World War II, on the acropolis of Asine. In his Catalogue of Ships, Homer has Asine 'lying down the deep gulf' (*Iliad* 2.560), that is, the Hermionic gulf some 8km south-east of Nauplion. As the view through the gun-port of the pillbox indicates, the acropolis overlooks and commands a sheltered, deep-water harbour. (Author's collection)

extensive circuit-wall of Cyclopean masonry, which encloses an area of 213,000m² (21.3ha), bear out the tradition that the citadel was important in the LH IIIB period. In sheer size it is the equal of Gla, but unlike Gla only a small proportion of the area enclosed by the circuit-wall, some 35,000m² (*c.* 3.5ha), was inhabited. Perhaps the topography of the site determined the layout of the fortification walls at Eutresis, which probably served as a refuge for all the nearby settlements.

Iolkos (Thessaly)

Although rarely mentioned in historical times, Iolkos is celebrated in the heroic age as the residence of Jason, and the place where the Argonauts assembled before setting out for the distant shores of the Black Sea in quest of the Golden Fleece. Homer, who gives it the epithets of 'strong-founded' (*Iliad* 2.712) and 'broad-streeted' (*Odyssey* 11.256), certainly makes mention of it.

Iolkos is situated on the northern shore of the bay of Volos, sheltered by Mount Pelion from whose forest, as legend has it, the timber for the Argo was hewn. Evidence points to the fact that it was a significant Mycenaean settlement, though its history remains obscure and the main area of habitation for much of the period may have been inland at Dimini, where there are two tholos tombs. Nevertheless, the large area covered by the ruins (some 400 by 700m over the surface of the hill, crowned with the impressive remains of the Ottoman fortifications and overlooking the modern port of Volos) makes it perhaps the largest prehistoric settlement in Greece. Moreover, a Mycenaean palace is located on the northward side of the site, which makes it, if indeed it is a palace, the northernmost one in Greece. Excavations have shown that Iolkos was inhabited continuously from the EH II period until the destruction of the LH IIIB palace at the beginning of the LH IIIC period.

Krisa (Phokis)

Occupying the tip of a long rocky spur projecting southwards from Mount Parnassos, the citadel of 'sacred Krisa' (*Iliad* 2.520) completely dominates the Krisaean gulf and the inland routes up the Pleistos valley, namely, the upper one via Delphi and the lower one along the valley bottom. A Homeric hymn to Pythian Apollo describes its situation perfectly: it stands on a rocky spur looking westward, overhanging a deep and rugged plain, at the foot of snowy Parnassos (*Hymn to Apollo* 269, 282–85, 438).

Krisa combines natural with man-made defences. Fortifications were unnecessary on the southern and eastern sides, but on the north and west there are remains of extensive Cyclopean walls, which date to the LH III period only.

Running a length of some 1,500m, several courses reach a height of over 3m and are composed of large blocks with smaller stones filling the interstices. Each 'skin' of the curtain-walls is between 0.7 and 0.9m thick, and the distance of about 2m between them is packed hard with rubble and earth. A gap, some 3.75m wide, in the eastern end of the wall suggests the existence of a gateway here. It is flanked by a semicircular tower, 6.2m in diameter and preserved to 2m height. The defences, both natural and man-made, thus enclosed an area 350 by 300m, large in comparison with other Mycenaean citadels.

Lamia (Thessaly)

This great stronghold dominates the lower valley of the Spercheiós and the plain adjacent to the head of the Maliac gulf, thereby controlling the route linking Thessaly with central Greece. It seems probable, therefore, that the castle-hill of Lamia was previously occupied in Mycenaean times. Still visible are the late 6th-century walls and the Frankish castle of Zitouni, all of which hide any possible earlier remains.

Orchomenos (Boiotia)

Pausanias claims that Orchomenos was 'as famous and glorious as any city in Greece' (9.34.5). Certainly the wealth of Orchomenos was proverbial, at least amongst the Achaians outside Troy. Not even 'all that is brought in to Orchomenos' (*Iliad* 9.381) was enough to placate the wrath of Achilles. This reputation for affluence was linked with Minyas, a legendary ruler of the city (*Iliad* 2.511), who gave his name to the Minyans, the clan to which the Argonauts were said to belong (Strabo 9.2.40, Apollonios *Argonautica* 1.229–33).

Orchomenos is situated in the north-west corner of the Kopaïc basin, on the east end of a ridge of Mount Akontion. The location is a naturally strong one. The north and south flanks of the ridge are steep and protected by rivers on both sides. Although the early occupation levels have been disturbed, it is clear that Orchomenos was a major Helladic site. There is a distinctive type of Middle Helladic pottery that is known as Minyan Ware because Schliemann first discovered it at Orchomenos during his excavations of the site (1880–86).

The so-called Treasury of Minyas, one of the finest Mycenaean tholos tombs and comparable with the Treasury of Atreus at Mycenae, was constructed in the early LH IIIB period. Pausanias calls it 'one of the greatest wonders of Greece and of the world' (9.38.2), and only a powerful dynast could have afforded such a lavish tomb. It may be no coincidence that the Mycenaeans fortified Gla at around this time and drained lake Kopaïs. If Orchomenos led this project, as seems likely, it was undoubtedly vying with Thebes for Boiotian supremacy. Moreover, unlike the Mycenaeans of the Argolid and Messenia, the tholos



The modern town of Volos, looking south-west from Makrinitsa, a village on the western slopes of Mount Pelion. The site of Iolkos is situated on the northern shore of the bay of Volos, sheltered by Mount Pelion from whose forest, as legend has it, the timber for the Jason's Argo was hewn. Although the hill upon which it once stood is now crowned with the impressive remains of the Ottoman fortifications overlooking the port of Volos, archaeological evidence points to the fact that Iolkos was a significant Mycenaean settlement. (Author's collection)

tomb was never popular with the Mycenaeans of Boiotia, and the Treasury of Minyas could be seen as an ostentatious assertion of independence.

Fit for a king, the Mycenaean tholos consists of a circular, subterranean tomb chamber roofed by a corbelled vault and approached by an entrance passage (*dromos*). The entire chamber, which resembles the classic beehive (hence the term 'beehive tomb'), is built of stone rather than simply being hewn out of bedrock. Tholos tombs of this kind are usually, though not invariably, set into slopes or hillsides. Burials were either laid out on the floor of the tomb chamber or were placed in cists or shafts cut into this floor. The whole structure was then deliberately covered with earth, thereby forming a visible tumulus.

Thebes (Boiotia)

Supposedly founded by Kadmos, the son of Agenor of Tyre, legendary Thebes was the birthplace of Herakles (*Iliad* 14.323–24), who, as its champion, threw off the tribute imposed upon it by the king of Orchomenos (Pausanias 9.5.1, 37.2). Oedipus, a descendant of Kadmos, became ruler after he had murdered his father, Laios, outwitted the riddling Sphinx, and married his mother, Jocasta. When he abdicated his sons Eteokles and Polyneikes quarrelled over the throne. Polyneikes led the Seven against Thebes and the brothers ended up killing each other. Small wonder, then, that Thebes serves as the macabre setting for a number of ancient tragedies (Aischylos' *Seven against Thebes*, Sophokles' *Oedipus Tyrannus*, Statius' *Thebaid*).

The modern centre of Thebes stands on the ancient acropolis, or Kadmeia, a large pear-shaped plateau 800m long and 400m at its widest point with steep slopes on all sides except to the south. Rising 60m above the surrounding plain, the Kadmeia is bounded on either side by rocky gullies. Thebes is well placed, at the meeting point of five main routes, and controlling the fertile grain-bearing Aonian plain.

Thebes is frequently mentioned in Homer, who speaks of its celebrated seven gates (*Iliad* 4.406, *Odyssey* 9.263). However, its name does not appear in the Catalogue of Ships as it was supposed not to have recovered from its recent sacking at the hands of the *Epígonoi*, the sons of the Seven who, ten years prior, had unsuccessfully waged war on Thebes. As with other places in Greece that have been inhabited continuously, most of the evidence for Mycenaean occupation has long disappeared. But nowhere has this taken place more completely than at Thebes. This is hardly surprising, as Thebes was mercilessly razed to the ground on three separate occasions. First by the Macedonians under their warrior-king, Alexander the Great (335 BC), second by the Normans of Sicily under their admiral, George of Antioch (1147), and finally by the 'gung-ho' Catalan Company (*la Companya Catalana*) after they fell out with their employer Gautier de Brienne, the Duke of Athens (1311).

Yet despite the repeated destruction of Thebes, beneath the modern streets lie two superposed Mycenaean palaces, the extent and positions of which have been tentatively plotted, and sections of the Cyclopean circuit-wall have been securely identified. Mycenaean pottery shards found on the western slope of the Kadmeia dated to the LH IIIB period and indicate the date of the building of the fortification walls. Quite recently (1993–95) some 250 Linear B tablets were unearthed in the area of the so-called Armoury belonging to the first palace ('The House of Kadmos'), which was destroyed by fire in the LH IIIA period. Further finds include frescoes; ornaments of gold; lapis lazuli; onyx and ivory, all of which indicate a level of refinement normally associated with a Mycenaean palace complex. More remarkable is the discovery of 42 exotic cylinder seals from the Near East, some of which were already antiques when the building went up in flames. Thebes presumably controlled the whole of southern Boiotia at this time, but Orchomenos was also a major Mycenaean centre and it is likely that the two citadels were already rivals.

The Mycenaeans

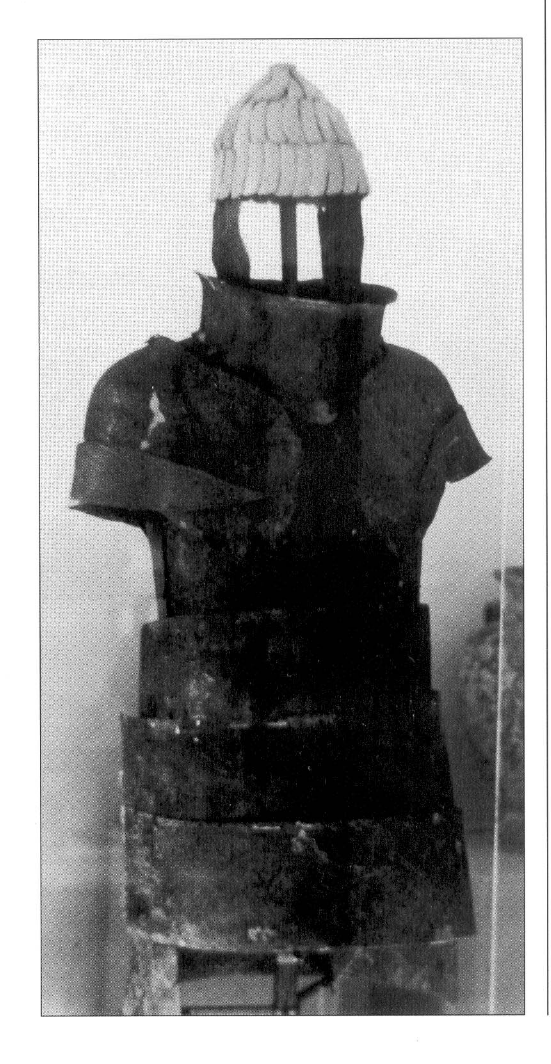
By the mid-14th century BC Mycenae had assumed the hegemony of the Aegean world, giving its name to the advanced civilisation in which it played the predominant part. Not that impressive memorials of the period are lacking in other parts of Greece: Messenia, Boiotia, Attica and Lakonia were all heavily populated, and it is to Pylos in Messenia that we turn for the best preserved palace on the mainland. The Linear B archives from there suggest that the 'warrior-king' (WA-NA-KA, *wanax*) of each region stood at the head of his own highly organised 'feudal system'.

'Bronze-armoured Achaians'

In Homer's version of the tale of Troy, despite the anachronisms, one basic fact is clear and consistent in his picture of the political geography of Greece. Namely, Agamemnon of Mycenae was the most powerful warrior-king of Achaia, and that he wielded some sort of loose overlordship over the other independent warrior-kings of Achaia, of Crete, and some of the Aegean islands. These local warlords, in their turn, were obliged to supply him with contingents for foreign ventures like that mounted against Troy. If we are to accept Homer's tale, this geopolitical unity is basic to it. The Homeric conception of Achaia as a nation under a single ruler may reflect Mycenaean reality. Here it should be noted that for Homer the term 'Achaia' is the collective name for mainland Greece, and 'Achaians' the Greeks and their allies ranged against the Trojans.

Nearly a third of Homer's monumental epic, which is over 15,600 lines long, is devoted to graphic descriptions of battle. Unfortunately for military historians the Homeric battlefield is confused and contradictory, an apparent amalgam of military customs and practices fashioned from some five centuries of bardic improvisation. On the other hand, excavations over the last century or so have produced a wealth of archaeological evidence, which enables us to build up a tentative picture of the Homeric warrior. Homer's warriors seem to be a jumble of Mycenaean traditions padded out with details from the bard's own day, that is, close to 750 BC. The Homeric hero rides to battle in a two-horsed war-chariot but fights on foot. He is armed with two throwing spears and a long slashing sword, which Homer claims could sever an opponent's head, leg or arm, or cut him in two. He wears bronze body armour, helmet and greaves. He also has a large round shield hanging from a neck-strap, which can be swung round to protect his back when he is in retreat.

Homer's warriors are often described as being heavily armoured with bronze (*Iliad* 5.698, 13.372, 14.383), while the epithet commonly used to describe them collectively is 'bronze-armoured Achaians' (*Iliad* 1.371, 3.131, 10.287). The regimented figures depicted on the Warrior Vase (LH IIIB/C), found by Schliemann at Mycenae are the best representations of warriors from the Trojan War period. The bearded warriors wear plumed horned helmets, body armour and greaves, and carry shields that are round except for a scallop on the bottom; they are armed with short spears.



Made of thick beaten sheet-bronze, this extraordinary body armour was discovered in a chamber tomb at Dendra (LH IIIA) near Midea. It exhibits many advanced features such as the articulated shoulder pieces and skirt. Such panoply would not have required a shield and seems rather rigid and cumbersome, not to mention extremely heavy and hot to wear, for a foot warrior. The skirt of bronze around the thighs must have prevented the wearer not only from running, but even walking at a normal pace and most probably belonged to a chariot warrior. (Author's collection)

Helmets

Although the horned helmet was common in the eastern Mediterranean at this time and Homer sings of such (*Iliad* 16.793–94), he does describe another type of helmet, that worn by Odysseus. This was 'a helmet wrought of hide, with many a tight stretched thong was it made stiff within'. On the outside cut slivers of boars' tusks were 'set thick on this side and that, well and cunningly, and within was fixed a lining of felt' (*Iliad* 10.261–65). Indeed, the boars'-tusk helmet is the commonest form of helmet shown in Mycenaean art, and examples of pierced boars' tusks have been recovered from Thebes, Mycenae and Knossos.

As reconstructed, the hide thongs probably criss-crossed over the crown making it thicker on the top where the force of a blow would be felt, and some helmets appear to have the ends of the thongs hanging down at the back to form a flexible neck-guard. The inside of the helmet was lined with felt, which would have provided comfort and additional protection as well as keeping the layers taut. The helmet's conical shape served to deflect missiles.

Known as the 'Head of Odysseus', this ivory inlay (LH IIIA) from Mycenae depicts a warrior wearing a boars'-tusk helmet. The cut slivers of boar's tusk are clearly visible, as are two layers of what appears to be the leather thongs hanging down the back of the helmet to form a flexible neck guard. Boars' tusks, while adding strength and impregnability to the construction, were also trophies of the hunt and thereby a visible means of expressing manhood. For a man to own such a helmet he must have hunted a great number of wild boars. Estimates suggest 60 to 80 or as many as 150 tusks would be needed, implying that 30 to 40 or 75 boars must be hunted and killed to provide a single helmet. (Author's collection)



Body armour

Virtually no body armour from the late Mycenaean period has survived. Bronze scales were found at Mycenae and Troy, and this, the oldest form of metal body armour, was used widely throughout the eastern Mediterranean and the Near East. Swedish archaeologists, however, discovered the earliest example of a beaten bronze cuirass at Dendra. It forms part of the Dendra Panoply (LH IIIA), which consists of 15 separate pieces of bronze sheet held together with leather thongs, which encased the wearer from neck to knees. The panoply also includes both greaves and lower arm-guards. The arm-guard is unique but greaves, probably made of linen, are often depicted in late Mycenaean art. A few bronze examples have been found, and these only covered the shins and may have been worn over linen ones. Although we have only one complete panoply to date, the Dendra Panoply appears often as an ideogram on Linear B tablets from Knossos (Sc series), Pylos (Sh series) and Tiryns (Si series).

The panoply's cuirass consists of two pieces for the chest and back. These are joined on the left side by a hinge. There is a bronze loop on the right side of the front-plate and a similar loop on each shoulder. Large shoulder-guards fit over the cuirass. Two triangular plates are attached to the shoulder-guards and gave protection to the wearer's armpits when his arms were in the raised position. There is also a deep neck-guard. The Linear B ideogram depicting armour of this type makes the neck-guard clearly discernible, and protection by a high bronze collar was a typical feature of Near Eastern body armour. Three pairs of curved plates hang from the waist to protect the groin and the thighs. All these pieces are made of beaten bronze sheet and are backed with leather and loosely fastened by ox-hide thongs to allow some degree of movement. The complete panoply thus forms a cumbersome tubular suit of armour, which not only fully protects the neck,

but also extends down to the knees. It appears that lower arm-guards and a set of greaves further protected the warrior, all made of bronze, as fragments of these were also found in the grave at Dendra. Slivers of boars' tusks were also discovered, which once made up a boars'-tusk helmet.

As previously mentioned, the figures on the Warrior Vase are wearing body armour. However this is an embossed waist-length leather corselet with a fringed leather apron that reaches to mid-thigh and possible shoulder-guards, very much like that worn by the 'Peoples of the Sea' depicted on the mortuary temple of Rameses III (d. *c.* 1155 BC) at Medinet Habu, Lower Egypt. Alternatively, the body armour was a 'bell' corselet of beaten bronze sheet, a type also found in central Europe at this time.



ABOVE Remains of a boars'-tusk helmet recovered from one of the Warrior Graves in the North Cemetery at Knossos. Homer describes this type of Mycenaean helmet in great detail, using such phases as 'thongs of leather', 'felt' and, of course, 'the white teeth of a tusk-shining boar' (*Iliad* 10.261–65). He even notes how the slivers of boars' tusks are laid in rows with the curves alternating. (Author's collection)

Shields

In the *Iliad*, shields are usually described as round and very large. Agamemnon's shield, for example, can shelter a man on either side. Round shields are seldom seen in Mycenaean art but all the 'Peoples of the Sea' used them, and they were common in central Europe at this time. Homer's description could possibly apply to shields with curved rims such as those on the Warrior Vase. In the dual between Ajax of Salamis and Hector, however, both combatants use full-body shields. Homer compares Ajax's shield to a tower (*Iliad* 11.485, 527) and as Hector walked off after the duel Homer says 'the dark leather of his bossed shield tapped him on the ankles and the neck' (*Iliad* 6.117–18).

Two forms of full-body shield, namely the figure-of-eight and the tower type, were used in the early Mycenaean period and both types hung from a neck-strap and could be swung round onto the back when running away. The weight of the shield would clearly have been crucial in allowing the warrior some freedom of movement and they were presumably made from perishable materials as none survive *in corpore*. However, both forms are represented on the Lion Hunt Dagger and the Silver Siege Rhyton found in Shaft Grave IV at Mycenae (*c.* 1550–1450 BC), but disappear from later Mycenaean art. Homer's shields were made of several layers of ox hide, probably stretched and then sewn over a wicker frame. This stitching is shown in a fresco from Knossos, and the dappling of the shields on the Lion

LEFT Fresco fragment from Mycenae depicting a figure-of-eight shield (National Archaeological Museum Athens, Inv. No. 11671). The frame consists of two bow-shaped pieces of heat-bent wood fastened to form a cross. The shield is made of several layers of toughened rawhide glued and stitched to a wicker core. It is finished off with a long boss, probably made of bronze or rawhide, and a rim of similar material. (Author's collection)

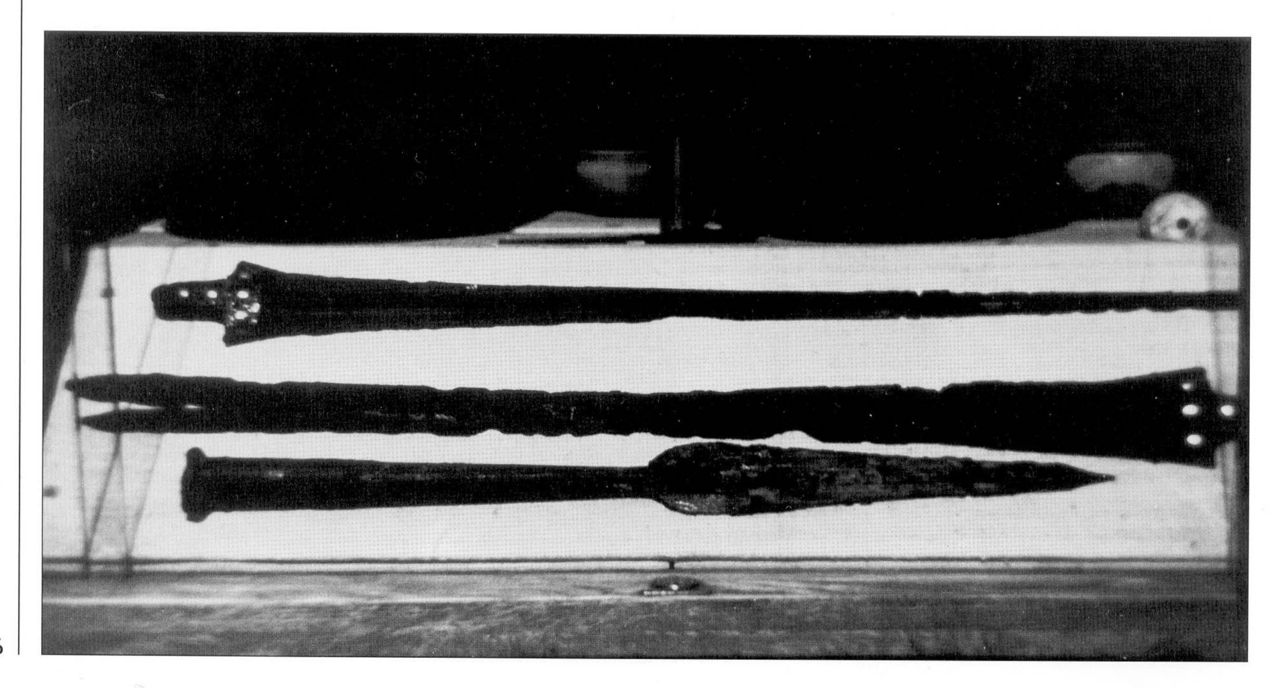
Hunt Dagger suggests the use of ox hide. Both artistic depictions also indicate that the shields had bosses and were edged with bronze. These shields would have afforded good protection as they curved around the otherwise unprotected body, although their size would undoubtedly have made them somewhat cumbersome.

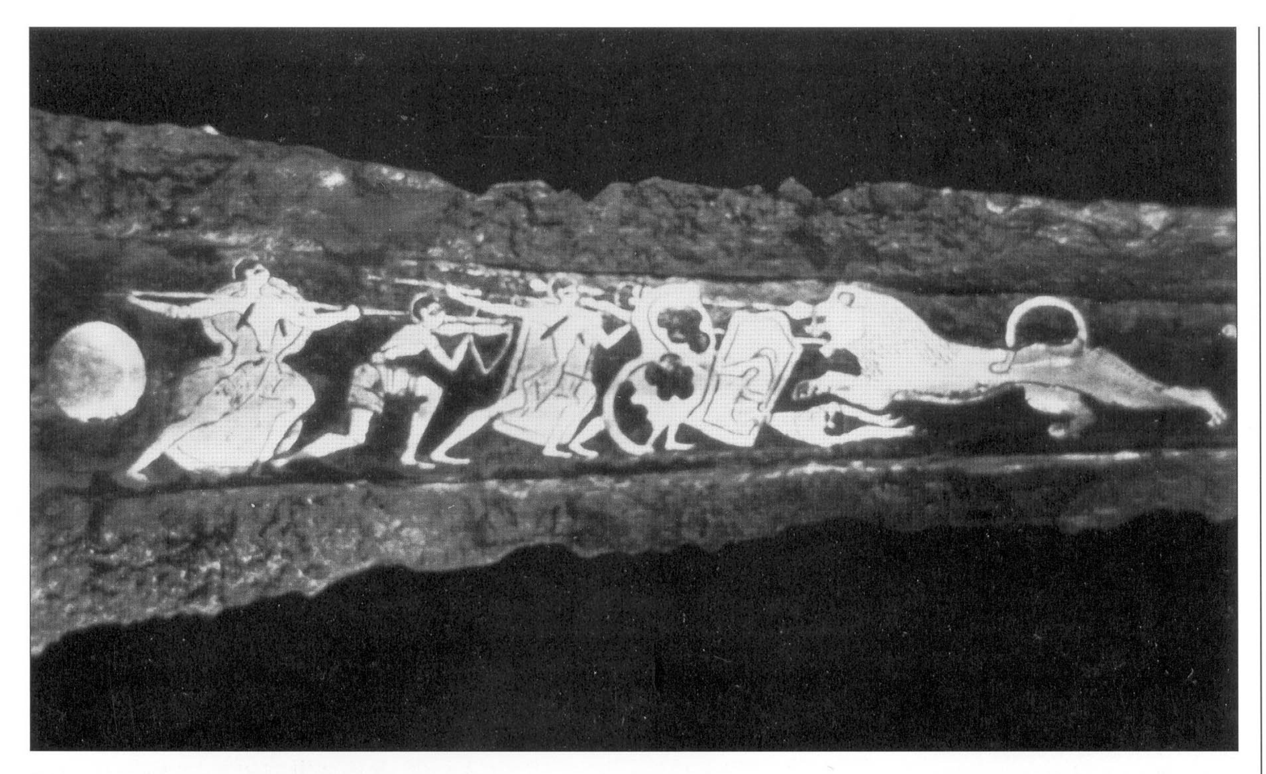
War chariots

In battle the Homeric warrior normally dismounted from his war chariot and advanced upon the enemy on foot (*Iliad* 8.320–22, 11.47–49, 16.426–27). He carried either one or two spears, which he could throw against his opponent (*Iliad* 3.346, 4.459, 14.461). If the enemy remained unscathed, he then protected himself with his shield against the retaliatory shafts (*Iliad* 5.15–20, 13.159–68, 21.159–73). If the spears of both parties were hurled in vain, the two warriors might set about each other with swords or, before resorting to these weapons, they might throw heavy stones at each other (*Iliad* 3.361–63, 22.306–11 [swordplay], 4.518–22, 12.379–85 [stone throwing]). Homeric war chariots, therefore, were not used for massed charges but merely for carrying the warriors to the front line where they dismounted and fought on foot.

In the 'Chariot Kingdoms' of the Near East, on the other hand, war chariots were not used as 'taxis' but were formidable close-quarter weapons. At the battle of Kadesh (*c.* 1275 BC), for instance, the Hittite king is said to have deployed no less than 3,500 chariots against his Egyptian opponents. No recognisable parts of a Mycenaean chariot has been brought to light but an inventory discovered in the 'armoury' at Knossos lists approximately 550 chariot bodies and at least as many pairs of wheels (Sc series). Similarly, at Pylos Linear B tablets list at least 200 pairs of wheels as well as wood for the making of 150 axles (Sa series), and two specifically mention chariot makers (En 421, 809). Requiring the services of a large number of specialists – besides chariot warriors and charioteers, the privileged elite, horse trainers, grooms, veterinarians, and carpenters were also a must – chariot forces were notoriously expensive to maintain. The rulers of Knossos and Pylos devoted a fair proportion of their resources to the maintenance of a chariotry of several hundred vehicles. To find the two-horsed war chariot often depicted in Mycenaean art need occasion no surprise.

Spearhead (LH I–IIB) from Shaft Grave IV, Grave Circle A, Mycenae (National Archaeological Museum, Athens, Inv. No. 446). It is remarkable for its large size (*c.* 0.65m), and thus could only have been attached to a long thrusting weapon such as a lance. This is probably the *enchos* of both Homer and the Linear B tablets, the weapon wielded by a chariot warrior. (Author's collection)





The Lion Hunt Dagger (LH I–IIB) from Shaft Grave IV, Grave Circle A, Mycenae. The central rib of this bronze ceremonial dagger is inlaid with gold and silver on a background of niello, an alloy of copper, lead, borax and sulphur, which produces a distinctive black or blue-black colour. The craftsman has graphically depicted the figure-of-eight shield and the tower shield in this hunting scene, even making the effort to include the strap that suspended the body-length shield from the warrior's neck. (Author's collection)

Mycenaean society

Linear B tablets indicate that Mycenaean society conforms to the anthropological model of a proto-state. The features of such include:

- Centralised socio-political organisation
- Social stratification
- Rulers dominate the socio-political elite
- Ruled must fulfil obligation to rulers
- Society is sustained by a common ideology

According to the evidence of the texts from Pylos and Knossos, social organisation was clearly hierarchical. At the head of it was the *wanax* ('warrior-king'), who was also the largest landholder. Under him was the *lawagetas* ('leader of the people'), who also owned extensive estates but whose role seems mainly religious. They stood at the head of a landed military aristocracy known as the *eqeta* ('companions'). These men possessed estates, wore a distinctive type of cloak and owned war chariots. In the Linear B tablets *eqeta* are distinguished by the use of the patronymic following their names.

Forming the socio-political elite, they presided over communities that were small in scale. Although most settlements ranged in size from a few households to some hundreds, the exploitation of the land was being expanded, probably to provide commodities for trade as well as to support an increasing population. In the Pylos and Knossos tablets, the *damos* is an entity that can allocate landholdings. It is perhaps best translated as 'village', which can refer either to the people of the community or to the land held by that community. The Linear B evidence strongly suggests that the *damos* is nothing more than a group of individual landholders, that is, a collective landholding body. Land could be leased from different owners and in various ways, but its tenure may always have entailed payment to the palace in taxes or service.

The Linear B tablets also list *doeros* and *doera*. Such personnel are common at both Pylos and Knossos. Although the later Greek cognates *doulos* and *doule*

mean 'male slave' and 'female slave' respectively, the Mycenaean Greek forms may have had a significance closer to 'bondsman/bondswoman'. Some *doeros* are clearly the property of living individuals, while others are described as being 'of a god/goddess'. The latter are the most common form at Pylos, but it is possible that a 'god's slave' had a status quite different from that of other slaves, since he or she could have leases on land and appears to have lived in much the same fashion as ordinary free persons.

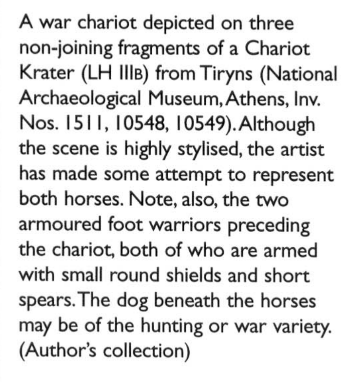
Collapse

The theories that attempt to explain the collapse of Mycenaean society (LH IIIB/C) can be roughly categorised as follows:

- Economic factors: Vermeule (1960), Iakovidis (1974), Betancourt (1976)
- Climatic change: Carpenter (1966)
- Internal social upheaval: Andronikos (1954), Mylonas (1966)
- Foreign invasion: Desborough (1964), Rutter (1973), Winter (1977), Deger-Jalkotzy (1983)
- Changes in the nature of warfare: Drews (1993)

In fact, the relatively sudden, extensive, and thorough eradication of Mycenaean palatial civilisation is likely to have been caused by a combination of factors. In any case, no one of the theories listed above addresses all of the questions inherent in a reconstruction of the Mycenaean collapse. These questions include, but are by no means limited to, the following:

- How stable was Mycenaean society in the first place? Was it flexible enough to withstand substantial 'shocks'?



A war chariot depicted on three non-joining fragments of a Chariot Krater (LH IIIB) from Tiryns (National Archaeological Museum, Athens, Inv. Nos. 1511, 10548, 10549). Although the scene is highly stylised, the artist has made some attempt to represent both horses. Note, also, the two armoured foot warriors preceding the chariot, both of who are armed with small round shields and short spears. The dog beneath the horses may be of the hunting or war variety. (Author's collection)



LEFT The 'Mask of Agamemnon', recovered by Heinrich Schliemann from Shaft Grave V of Grave Circle A at Mycenae. Dated to the early Mycenaean period (LH I–IIB), this death mask is just one of an impressive amount of gold objects brought to light by Schliemann's spade, and justifies Homer's description of Mycenae as 'rich in gold' (*Iliad* 7.180, 11.46). (Author's collection)

BELOW A Mycenaean chariot depicted on the shelly sandstone grave stela (LH I–IIB) that marked Shaft Grave V, Grave Circle A, Mycenae (National Archaeological Museum, Athens, Inv. No. 1428). This is the first known representation of the war chariot in Bronze Age Greece. Here an armed warrior in a chariot pursues a second fleeing foot warrior. The chariot warrior appears to be levelling a long thrusting spear or lance. Alternatively, he could be holding reins of the horses harnessed to his chariot. (Author's collection)

- Were there certain 'shocks' that affected Mycenaean society as a whole? Were these in every case ultimately responsible for the destruction of individual citadels or were such upheavals often the final links in highly localised chains of causation?
- Why were the palaces never rebuilt?
- Why were large areas of the Peloponnese, including some of the richest agricultural zones in southern Greece, so thoroughly depopulated during the century following the destruction of the palaces? What percentages of the population that disappeared died in Greece of famine and disease or in battle, and what percentage migrated south to Crete, east to Cyprus, or west to the Ionian islands?

What is indisputable, however, is that the continuity of civic life was disrupted and material progress was set back for several centuries.



Ancient authors

Myths were at the heart of ancient Greek life and culture. They held a central place in poetry at public and private festivals, and were told and retold by professional taletellers; changing and developing as time went by, and from the 6th century BC onwards forming the subject of gripping dramas played out on the tragic stage. But these myths were more than mere stories. To the Greeks they were the stuff of history, telling of real people in the real past. Myth explained a man's genealogy, often originating from a divine mythical ancestor, and thus showed his place in the world and his relation to the great heroes of old. Other uses included the foundation of social and political order, thereby explaining how cities originated or how tribal groupings arose. Naturally the question of how far the myths are based on fact is a difficult one, and there is no generally agreed answer, nor ever likely to be. For some, myself included, the feeling is that many of the myths have a core of truth. Pausanias himself (8.8.3) obviously had doubts initially, yet on his travels he came to realise otherwise and thus see a deeper meaning in many myths:

> When I began to write my history I thought these Greek stories were rather silly, but now I have reached Arcadia I have decided to treat them from the point of view that the famous Greek wise men told their stories in riddles and not out of stupidity.

As we have seen, myths are intimately associated with Mycenaean citadels. The expansion of Mycenaean power coincides with the myths of the foundation of Mycenae by Perseus and of Thebes by Kadmos, while the legend of Herakles reflects the essence of Boiotian politics, which were moulded by rivalry between Thebes and Orchomenos.

Myth was originally the product of an oral society, but the arrival of writing brought important changes. In addition to the poets and the playwrights, the myths were also told, re-told, collected or commented upon by philosophers, historians, geographers and travellers. Listed below, therefore, are the most frequently cited ancient authors whose literary works contribute to the myths in various forms, and are easily accessible in translation (Penguin Classics and/or Loeb editions).

Apollodoros of Athens (*fl.* 140 BC)

Apollodoros, having studied in Alexandria, spent much of his life in Athens where he wrote a number of scholarly works on grammar, history and mythology. His best-known works, only fragments of which survive, are *On the Gods*, a prose treatise, and his verse *Chronicle*, treating Greek history from the fall of Troy. He was considered quite an authority and, hence, various forgeries were written in his name, especially the *Bibliotheca*.

Providing a grand summary of Greek myths and heroic legends, the *Bibliotheca* is an essential account of what the Greeks believed about the origin and early history of the world and of the Hellenic people. This treasury of narratives about gods and heroes has been attributed to Apollodoros, but its author, judging from the language used in the text, probably lived sometime during the 1st or 2nd centuries AD.

Homer (*c.* 750–700 BC)

Homer is the name given to the author of two epic poems, the *Iliad* and the *Odyssey*, but they may not be by the same person. These epics, the 'bible' of the Greeks, were the product of a long tradition of oral poetry, and were only written down towards the end of the 8th century BC. Both epics were meant to be recited aloud, and deal with heroic exploits of 'mythical' men and gods. Their exact relationship to, or reflection of, any particular historical period is a matter for fierce debate.

Pausanias (*fl.* AD 115–176)

The noted antiquarian and traveller who lived during the period of the Antonine emperors, Pausanias was probably a Greek from Lydia. He was certainly familiar with the western coast of Anatolia, but his travels extended far beyond the limits of this region.

Writing for tourists, Pausanias produced the highly competent Blue Guide of his day, the *Periegesis* (*Description of Greece*). This takes the form of a tour in the Peloponnese and parts of central Greece. For us his work is extremely valuable for questions of topography, architecture, mythology, derivations of names, and anecdotal stories vis à vis culture and history.

Strabo (b. *c.* 63 BC)

We are fortunate in possessing all 17 books of the *Geographia* by Strabo, written in Greek although he himself was mixed Asiatic and Greek stock from Amaseia in Bythnia-Pontus. Strabo was educated at Nysa in Caria, and in 44 BC went to Rome, where he studied philosophy. From about 25 BC to 20 BC he was in Egypt, based at Alexandria. His *Geographia* was written between 9 BC and 5 BC and parts revised in AD 18/19.

Strabo claimed to have travelled widely to bring together an enormous amount of geographical knowledge. It is generally accepted, however, that he must have compiled much of this information in the library at Alexandria, where he had access to many earlier texts now lost. The *Geographia* is of key importance to our whole knowledge of the history of Greek cartography. Many of the earlier treatises that touch upon maps are known to us only through Strabo, while the interest of his commentary on these writers is in its critical handling of their theories.

The sites today

Návplio, an attractive seaside town, is the best centre for excursions in the Argolid. With a hired car, it is possible to make a superficial tour of Tiryns, Argos and Mycenae in one day. Nestor's Palace (Pylos) is the other archaeological site of note, which is easily reached from Pílos some 16km away. Dominated by the Turko–Venetian fortress of Neokastro, this charming little town rises from the southern shore of the bay of Navaríno, famed as the location for the last naval engagement involving wooden sailing ships (27 October 1827).

A major attraction well worth the visit is the Hall of the Mycenaean Antiquities in the National Archaeological Museum, Athens. The unique Mycenaean treasures, unearthed by Schliemann, include the Mask of Agamemnon and the Warrior Vase. Other archaeological museums worth visiting are those at Argos (Lerna finds), Návplio (Dendra Panoply), and Chora (Pylos finds).

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Glossary

An unusually extensive and specialist vocabulary has developed in the field of military architecture. A glossary has therefore been supplied to guide the reader through the technical terms used in the literature of Mycenaean fortification systems. Obviously many of the terms below are common to pre-gunpowder fortifications in general.

Acropolis Literally 'high city', but in a Mycenaean context the citadel rock

Ashlar Worked stone with a flat surface, usually of regular shape and square edges

Bastion Projecting work either at the angle of two walls in a fortification or set adjacent to a gateway; structural rather than inhabitable and generally serving as a fighting-platform

Cistern Storage place for potable water, invariably underground

Citadel A Mycenaean site so identified as fortified but not necessarily the seat of a ruler's residence

Corbel vault System of roofing with each course projecting slightly further than the last

Crenellation Fortified parapet, complete with merlons and crenels, at the top of a curtain-wall

Curtain Main wall of a defensive work or the part of a rampart hung between two contiguous bastions or towers

Cyclopean Drystone masonry of huge blocks or boulders

Enceinte Area enclosed within a citadel's main line of ramparts, but excluding its outworks

Fosse A ditch, either with or without water in it, in front of the rampart

Gallery Long corbel-vaulted passage or chamber built into the circuit-wall

Header A stone block laid across a wall so that its end is flush with the outer surface (cf. stretcher)

Lintel Horizontal stone block or wooden beam bridging an opening to carry the weight of the wall above it

Megaron Central hall of a Mycenaean palace with a fixed hearth surrounded by four wooden columns and approached through a columned porch via an anteroom; its basic configuration is a forerunner of later Greek temple forms

Magazine A storage place

Palace Residential architecture reserved for a Mycenaean ruler (*wanax*)

Parapet Low narrow defensive wall, usually with crenels (open part) and merlons (closed part), along the upper outer edge of the curtain-walls

Polygonal Drystone masonry of large roughly worked blocks

Postern Small additional gateway

Propylon Monumental gateway

Salient Projection of the circuit-wall

Sally port A concealed tunnel or passage providing access to outside the citadel; may be intended as a means of escape, for sorties in a siege or as a shortcut during peace

Scaling ladder A ladder for scaling or mounting curtain-walls or ramparts

Stretcher A stone block laid horizontally with its length parallel to the length of a wall (cf. header)

Bibliography

Aravantinos, V., 'New Archaeological and Archival Discoveries at Mycenaean Thebes'. *Bulletin of the Institute of Classical Studies* 41: 1996, 135–36

Blegen, C. W., *A Guide to the Palace of Nestor: Mycenaean Sites in its Environs and the Chora Museum*. Princeton: American School of Classical Studies at Athens, 2001

Blegen, C. W., and Rawson, M., *The Palace of Nestor at Pylos in Western Messenia*, vol. I. Princeton: Princeton University Press, 1966

Blegen, C. W., Rawson, M., Taylour, W. D., and Donovan, W. P., *The Palace of Nestor at Pylos in Western Messenia*, vol. III. Princeton: Princeton University Press, 1973

Broneer, O. B., 'The Cyclopaean Wall on the Isthmus of Corinth and its Bearing on Late Bronze Age Chronology'. *Hesperia* 35: 1966, 346–62

Broneer, O. B., 'The Cyclopaean Wall of the Isthmus of Corinth, Addendum'. *Hesperia* 37: 1968, 25–35

Demakopoulou, K., 'Mycenaean Citadels: Recent Excavations on the Acropolis of Midea in the Argolid'. *Bulletin of the Institute of Classical Studies* 40: 1995, 151–76

Dickinson, O. T. P. K., *The Aegean Bronze Age*. Cambridge: Cambridge University Press, 1994

Fields, N., Fortress 17: *Troy c. 1700–1250 BC*. Oxford: Osprey, 2004

Fitton, J. L., *The Discovery of the Greek Bronze Age*. London: British Museum Press, 1995

French, E. B., *Mycenae: Agamemnon's Capital*. Stroud: Tempus, 2002

Halstead, P., 'The Mycenaean Palatial Economy: Making the Most of the Gaps in the Evidence'. *Proceedings of the Cambridge Philological Society* 38: 1992, 57–86

Hope Simpson, R., *A Gazetteer and Atlas of Mycenaean Sites*. London: Institute of Classical Studies, 1965

Hope Simpson, R. and Lazenby, J. F., *The Catalogue of the Ships in Homer's Iliad*. Oxford: Clarendon Press, 1970

Iakovidis, S. E., *Gla and the Kopais in the 13th Century BC*. Athens: Archaeological Society at Athens, 2001

Jannoray, J., and van Effenterre, H., 'Fouilles de Krisa (Phocide)'. *Bulletin de correspondance hellénique* 61: 1937, 299–353

Lang, M. L., *The Palace of Nestor at Pylos in Western Messenia*, vol. II. Princeton: Princeton University Press, 1969

Loader, N. C., *Building in Cyclopean Masonry: With Special Reference to the Mycenaean Fortifications on Mainland Greece*. Jonsered: Paul Åström, 1998

Manning, S. W., 'The Bronze Age Eruption of Thera: Absolute dating, Aegean Chronology and Mediterranean Cultural Interrelations'. *Journal of Mediterranean Archaeology* 1: 1988, 17–82

Manning, S. W., 'The Theran Eruption: The Third Congress and the Problems of the Date'. *Archaeometry* 32: 1990, 91–100

Manning, S. W., *A Test of Time: The Volcano of Thera and the Chronology and History of the Aegean and East Mediterranean in the mid-Second Millennium BC*. Oxford: Oxbow Books, 1999

March, J., *Dictionary of Classical Mythology*. London: Cassell, 1998

Mylonas, G. E., *Mycenae and the Mycenaean Age*. Princeton: Princeton University Press, 1966

Mylonas, G. E., *Mycenae Rich in Gold*. Athens: Ekdotike Athenon, 1983

Renfrew, C., *The Emergence of Civilisation: The Cyclades and the Aegean in the Third Millennium BC*. London: Methuen, 1972

de Ridder, A., 'Fouilles de Gla'. *Bulletin de correspondance hellénique* 18: 1894, 271–310

Scoufopoulos, N. C., *Mycenaean Citadels*. Göteborg: Paul Åström, 1971

Symeonoglou, S., *The Topography of Thebes from the Bronze Age to Modern Times*. Princeton: Princeton University Press, 1985

Taylour, W. D., *The Mycenaeans* (2nd edition). London: Thames and Hudson, 1983

Threpsiades, I., 'Kopaïs: Arne–Glás'. *Ergon* 1961: 1962, 39-48

Wace, A. J. B., *Mycenae: An Archaeological History and Guide*. Princeton: Princeton University Press, 1949

Wardle, K. A., and Wardle, D., *Cities of Legend: The Mycenaean World*. Bristol: Bristol Classical Press, 1997

Warren, P. W., *The Aegean Civilizations* (2nd edition). London: Phaidon, 1990

Warren, P. M., and Hankey, V., *Aegean Bronze Age Chronology*. Bristol: Bristol University Press, 1989

Wood, M., *In Search of the Trojan War* (2nd edition). Berkeley: University of California Press, 1998

Zangger, E., *The Geoarchaeology of the Argolid*. Oxford: Oxbow Books, 1994

Index

Design, technology and history of key fortresses, strategic positions and defensive systems

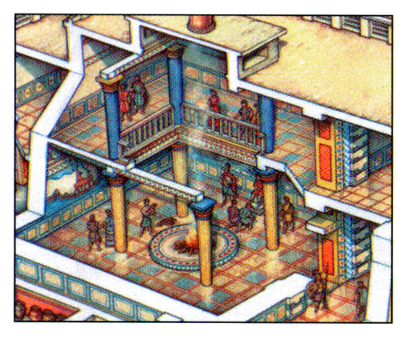
Mycenaean Citadels *c.* 1350–1200 BC



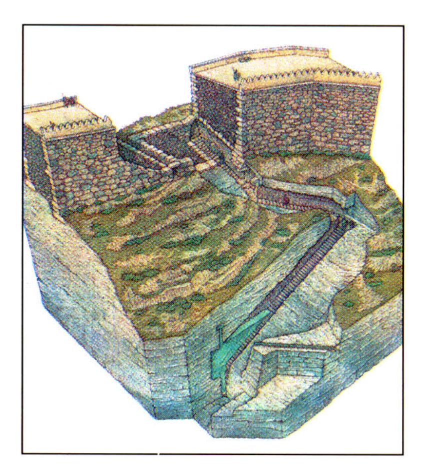
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Mycenaean society was constantly geared for battle and invasion. Their 'cities' were heavy fortresses with unimaginably thick perimeter walls. Legendary sites such as Mycenae, Tiryns, Argos, Krisa, the Athenian Acropolis and Gla are all representative of these fortified citadels that dominated the Greek countryside for some 300 years until their sudden decline and abandonment around 1100 BC. This title describes the golden age of these fortifications; it details how these formidable structures were constructed and extended, as well as revealing the elaborate palace complexes built by the great Mycenaean warlords immortalised in the verses of Homer's *Iliad*.



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